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editorial

Welcome to the first of our new 'themed' issues. It's patently clear that the audio world is undergoing serious change, and what's happening in the next generation of music replay is where change is happening most rapidly. So, instead of our conventional generalised 'round-up', we choose to concentrate on all things computer audio this issue.

There are no apologies here. This issue predominantly covers the best DACs, servers, and streamers that are designed to make the most out of audio of today and tomorrow. We have a feature specially commissioned to introduce streamed audio to an audio audience possibly still used to disc-based systems. And, subtly introduced in the last issue, we have begun to include high-resolution audio formats in our music reviews. This last has been difficult until comparatively recently because as a truly international magazine, we have been hampered by high-resolution recordings not being available in every part of the world. That has changed, too, and in a good way for the audio enthusiast.

However, we also strive not to speak in one voice on this issue. People are on different parts of the continuum. Even among the relatively small circle of reviewers on the books of *Hi-Fi+*, we have people who have fully migrated across to downloaded and streamed music sources, some who will not countenance anything apart from CD in their homes, and all points in between. Consensus here is impossible to find, and that's a good thing.

The concern going ahead is that the drive toward high-resolution comes at

the expense of sanity. Like many of my colleagues, I still enjoy a lot of music ripped from 16-bit, 44.1kHz CD files. Contrary to opinion, this did not become 'mid-fi' when high-resolution appeared. If anything, it seems CD and CD-quality audio still have a great deal to offer listeners, and should not be discounted and demonised out of hand.

We hope you enjoy this round-up of some of the best in digital audio. Please let us know your thoughts and feelings at editor@hifiplus.com.

Congratulations are in order to Joshua Hannen, from Birmingham UK, who won a pair of excellent flagship RHA T10i in-ear monitors, worth £150.

Errata: In the last issue of *Hi-Fi+*, we published an incorrect price for the Penaudio Sara S loudspeaker. The correct prices should have been £4,500 per pair, or £5,000 per pair in special finishes (such as gloss black and gloss white). We would like to apologise for any confusion caused.

Alan Sircom
editor@hifiplus.com

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Or email them to editor@hifiplus.com

incoming!

Final Vinyl?

Like many, I abandoned vinyl years ago. It was a fine format in the 1950s, but it was thoroughly eclipsed by CD in the 1980s. I was an early adopter of CD. The turntable was sold off before the end of the decade, the records ended up at a charity store, I started the 1990s almost entirely in the digital domain, and I've never looked back. No more pops, crackles, and rumbles for me!

So, it comes as some surprise to see LP staging a comeback. My son is possibly a fairly typical example of this new breed. He came back from university over Christmas sporting a new beard, a new girlfriend, and a new turntable. Actually, the last one is notionally 'mine' as I'm pretty sure I paid for it! However, it seems the way he collects LPs is very different to the way I used to; he listens to a lot of music on his laptop (while studying, he says) through Spotify, and if he hears something that really grabs his attention, he'll buy it on LP. Not CD, not download... LP. He seems to suggest this is the way lots of people are listening to music today.

I just don't get it! Why would you voluntarily listen to an inferior format for something you want to keep, when you can hear it over and over again – effectively for free – online? I've suggested he should try connecting the laptop to his system, but he says he's not interested, unless it's a party.

It's also strange how these things go full circle. I used to think my father was a dinosaur for sticking with LP, and now my son thinks I'm a dinosaur for sticking with CD.

I can't help thinking this is a fad, vinyl's last 'hurrah' before it finally rolls over and dies. But, just as the Flat Earthers used to say in the 1980s and 1990s, my son keeps trotting out that hackneyed phrase, 'vinyl sounds better!' It was wrong 30 years ago; it's just as wrong now!

Andy Burnham, via email

Personally, I think vinyl sounds great, and it often sounds especially good when dealing with dynamically-compromised 'hot master' recordings. Yes, this is putting the limitations of the format to good use (because Loudness War casualties are all but unplayable on vinyl), but the net result is we are beginning to see albums being released with some semblance of dynamic range not only on LP, but through iTunes and on Spotify, too. Whether these things are causally linked is unclear, but it bodes well for music.

"The turntable was sold off before the end of the decade, the records ended up at a charity store, I started the 1990s almost entirely in the digital domain, and I've never looked back. No more pops, crackles, and rumbles for me!"

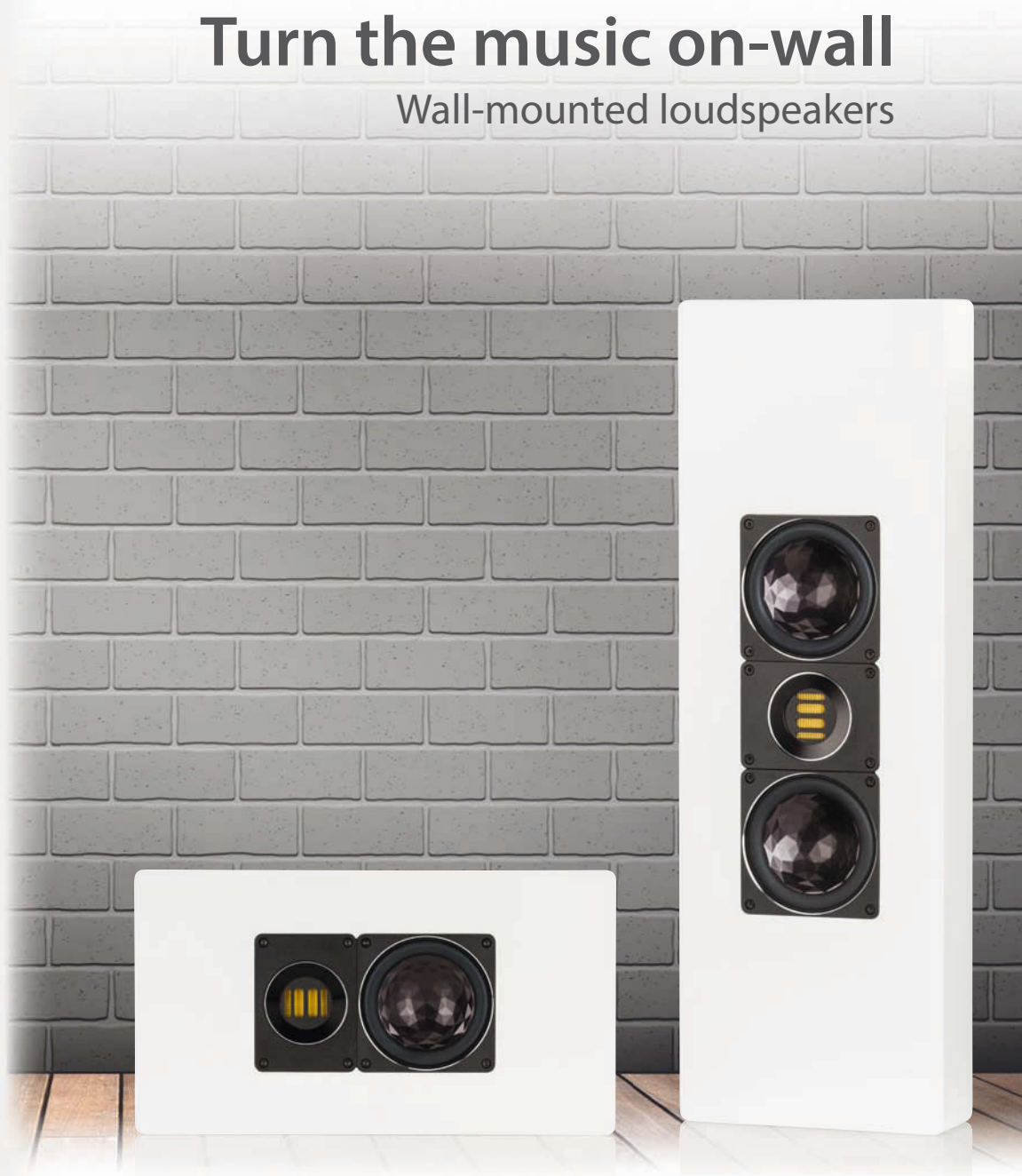
Rather than harbour angst toward the growing LP community (which, ultimately, includes your own son), I'd say take an 'it's all good' stance, if you can. As an audio enthusiast, you should be encouraged by a new generation of music lovers discovering that music can also sound better if played properly in the home. If nothing else, it means when they finally cart you off to the rest home, your treasured audio system won't immediately end up thrown out.

I am somewhat surprised at the animosity you hold toward LP. While it isn't for everyone, the pops, clicks, and crackles you describe are rarely intrusive and, to quote the late DJ John Peel, "life has surface noise!" Quite often, the negativity towards vinyl comes from mediocre (or worse) LP replay systems heard in the 1970s and 1980s. A good, inexpensive, turntable today is capable of remarkable resolution and insight, and the really well-built decks, arms, and cartridges do still offer a slice of unadulterated audiophile magic! – Ed

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► Are hobbies dying?

There are common hobbies among men of a certain age (like me). Those of us who like hi-fi also tend to like things like cameras, watches, guitars, fast cars, fast motorbikes, racing bicycles, exotic locations, and all the other 'boy's toys' that we couldn't afford when we really were boys.

None of us like all of these hobbies, but most of us tend to like more than one. For me, you can keep the Harley, or the Gibson, but give me a Leica, a Porsche, or an IWC and I'm all over it like a nasty rash.

Every few years, my wife and I take a tour of European cities. We love them, not just for the beautiful locations and the great food and wine, but also because we often became friends with like-minded fellow travellers on the same tour. Last year, though, I noticed a distinct trend. There were far fewer people taking photos on cameras and a lot using their smartphones instead. Finding the like-minded photographer on this tour proved difficult, and I came away a little disappointed that I had no fellow photographers to share my enthusiasm with.

Now, I read that sales of cameras are down by almost three-quarters compared to their 2010 peak, watch sales are tumbling, and that the upcoming generation is the first since possibly the 1930s to not take an active interest in owning a car. It looks as if those 'boy's toys' will soon run out of boys to play with them, as we Baby Boomers get older and die off.

Hi-fi has also suffered a significant drop in sales and interest recently. Are we witnessing the end of the hobby – and the hobbyist?

Tim Cross, via email

Of course I would say this, but I'm not entirely convinced we should start penning a requiem for the hobbyist just yet. Granted, the hobbies and interests of a generation or two ago may not fit snugly into the lifestyles of a twentysomething Millennial, but that is not to say the concept of the 'hobby' is dead.

To take your photographic example, yes, the camera market has seen sharp falls, especially in the compact camera market, and these can be more or less directly attributed to the rise of the smartphone. More recently, the quality DSLR market has also seen a cooling, although nowhere near as much as the compact camera business. This could be read as another nail in the shutterbug's coffin, or it could be that everyone who would own a DSLR already has a relatively recent DSLR and the market has shrunk back to its true level. In hindsight, a time of significant market contraction might not have been the ideal opportunity to launch the new mirrorless cameras, but in fairness the sales of this new technology have been steady, if not quite the wild growth expected six or seven years ago.

Our views surrounding hobbies are generally localised. Our interests are like fine wines and don't travel well! What goes on in audio (or photography, or watches, or cars) in one country may not account for the entire world. There is also a vibrant online community in audio – especially headphone audio – that although it may at times descend into a slanging match, does demonstrate that the hobby is far from dead. – Ed

Funectomy?

It's taken a little while for it to dawn on me, but I've noticed a subtle change in *HiFi+*. The reviews, reviewers and equipment chosen, remains top notch and always interesting, if not fascinating. But there's something missing.

There used to be an undertone of dry humour or light satire which leavened the articles. I miss the occasional humorous critique of the market or individual offerings, the recognition that the audiophile breed includes a few eccentrics. Perhaps that's because the market has been rocky the last five years, perhaps it's because the humour doesn't translate across the pond. I don't know if this is necessary editorial policy, but its absence has left *HiFi+* a drier, worthy publication which now lacks a certain tongue-in-cheek sparkle. I miss it.

Giles Morrison, via email

P.S. It is with a deep sense of irony this morning that I noted your recent Krell review includes exactly the humour I've been missing. More please.

I'm pleased the Krell review palpated your humour gland. We'll try harder in future. In fairness, British humour can be a trifle left-field and colloquial for an international audience, unless your name is John Cleese. – Ed

Bristol Sound & Vision Show 2015

by Alan Sircom

The Bristol Show (more formally, The Sound & Vision Show) runs at the tail end of February at the Marriott City Centre hotel near Bristol's Cabot Circus development. Now in its 27th year, the show has seen audio eclipsed by home theatre, only to return to a position of dominance. It has seen a market eroded by iDevices and smartphones, only to claw back with headphones. Now, Bristol is seeing audio begin to regroup once more, thanks to the vinyl revival, music streaming, and quality Bluetooth-related connections to smartphones.

The Bristol show has become the largest event on the UK calendar; the National Audio Show may be more orientated to high-end audio, but Bristol has become something of a bellweather, allowing us to gauge the enthusiasm real-world

customers have toward today's audio equipment. And judging by this year's show, the 'buzz' is returning. This show has a distinct price ceiling – except for a few notable exceptions, most audio equipment at the show is in the hundreds or low thousands of pounds level – and much can be ordered at a discount at the show itself, which makes for a more immediate 'tell' on the success of a product.

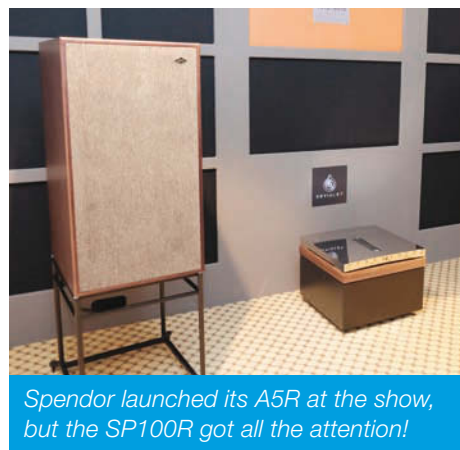
The Bristol show is also perfectly timed to show products launched at CES for the first time in Europe, several months before the Munich High-End Show. However, it has also become a showcase for new products in its own right, especially from UK manufacturers wanting to give the home audience a preview of upcoming products. For more details, please see our show reports at www.hifiplus.com. +



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Q Acoustics new S-Series offers value for money



Sendor launched its A5R at the show, but the SP100R got all the attention!



PMC's Twenty Sub uses DSP for audio integration



Kudos Audio's Titan 808 is the first non-Linn speaker to use Exakt technology



Visitors lined up around the block to be the first through the doors every day of the show, despite the typically bitter and wet late-February weather. There are bargains to be had, and Bristol can be like the Black Friday of the UK audio world



Keith Martin of IsoTek shows off the new EVO3 Venus mains conditioner



REL's Kev Starkie models the huge new 212SE sub



Hegel's relaxed 'play anything' demos won the company a lot of UK friends



Russell Kauffman with Hi-Fi's Red 100 prize



Dr A J van den Hul was repairing and retipping cartridges live at the show



Newcomer Pristine Vinyl showed prototype home-friendly record cleaners



VPI's new Prime replaces the basic Classic and Scoutmaster in its streamlined range



Sony has committed to high resolution, as its MDR-Z7 headphones demonstrate



Timestep has a reputation for making clever modifications to popular turntables, but a second armboard for a SME 10 is a work of genius!



The clever Booplith is a bamboo replacement plinth for the classic Linn LP12, which improves the sound of the turntable in the process



Dynaudio's Focus XD system combines DAC, amp, and loudspeakers in the same elegant tower loudspeaker box, driven here by a Naim UnitiServe

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Rega Research showed and played late prototypes of its upcoming RX range



Chord Electronics new Digital Integrated 2800 MkII amp offers Hugo-grade digital conversion, and can even play DSD 128 files



In the SMS1, BenchMark now makes speakers!



Launched at the show, Naim's NAC-N 272 streaming preamplifier adds DSD support



Quad's new Artera range will be launched later in the year, but Bristol saw the first public outing of the CDP CD-playing preamp and 140W Power



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Introduction to Streaming

by Jason Kennedy

Streamed audio is not a new format, nor even new technology, but it has taken the place of the CD in many enthusiasts' systems. This means it has the characteristics of a format in our world, but streaming's strength is that it's almost format free. In theory (and often in practice as well) you can stream existing audio formats on a piece of hardware that can also accommodate future formats. This may require a hardware update, but often a software update over the web is sufficient. Streaming is tremendously flexible in that respect.

But why has streaming proved so popular? There are a number of reasons, but prime among them is the ease of access to your music collection. We no longer expect to fine tune a turntable every time we sit down for a session. Instead, we want easy access and good sound. And there's nothing quite as easy as selecting your music on a tablet from the comfort of your listening chair. That's not to say sound quality is secondary however, as a good streaming source is extremely resolute and engaging. The majority of streamers sound more refined than the majority of CD players; pound for pound they are a revelation in this respect. If the harsh glare of digital audio has kept you in the analogue fold you might be pleasantly surprised by the presentation of a decent streamer. Pitting the best streamers against the best CD players will split opinion of course, but in my experience streamers excel at low level detail, refinement, and openness while disc spinners have the upper hand at timing, and the emotional engagement that good timing delivers. The fact that Naim uses its NDS streamer to demonstrate the megabucks Statement amplifiers rather than the more costly CD555 CD player should tell you something. It's clear from sales data that CD players are being squeezed out by the revival of turntables and the ascent of streamers.

The other obvious advantage streaming devices have in the digital arena is the ability to play higher bit and sample rate recordings. Unlike CD players, streamers are not restricted to the 16-bit/44.1kHz Red Book format. Chipsets exist that can replay sample rates up to 384kHz and quadruple DSD (DSD256), and quite possibly higher by the time you read this. Higher bit and sample rates are not in themselves a panacea for good sound of course; you can probably remember numbers races in the past, such

as THD, where better figures did not mean better sound. I heard recently that the BBC used to send FM signals to its transmitters at 13-bit in the 1970s, and FM was considered pretty good back then. Today's DAB broadcasts stretch to 128kbps if you're lucky.

History

Streaming started in what is now called the CI or custom installation world back in the 1990s. When you want to send audio to multiple rooms and control it from a single point, you can't beat transmitting that signal through a network. The CI industry used computer platforms and storage systems to develop means of providing multiroom audio without multiple sources, and companies including Linn and Naim started out in streaming this way. Both have now abandoned CI and concentrate on domestic streaming hardware, Linn doing so in the most dramatic fashion, when it announced that it would stop making CD players in late 2009.

The more affordable entry point in the early days was Squeezebox's range of rendering devices or players. Squeezebox released a full-size streamer called the Transporter, but it was the smaller and rather more affordable Touch that captured the attention of enthusiasts. The brand itself has been absorbed into the Logitech fold and most of the Squeezebox hardware is no longer manufactured, but the Touch remains a popular player with numerous mods and tweaks available to the enthusiast. You can even get it to stream the latest music services.

Computing

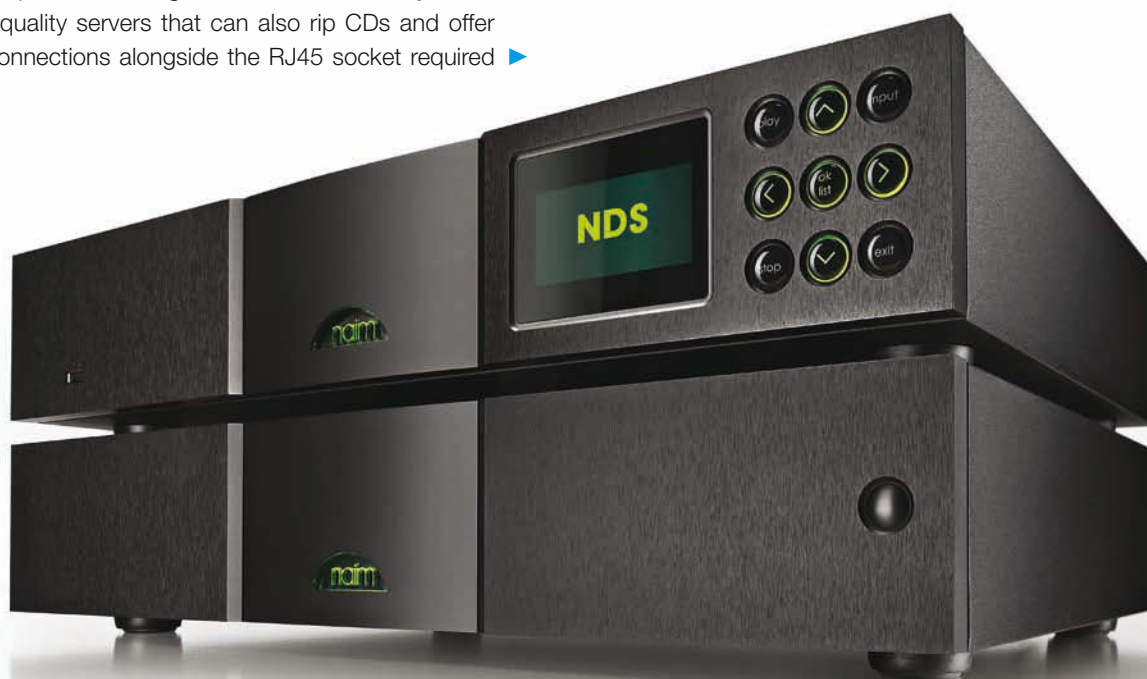
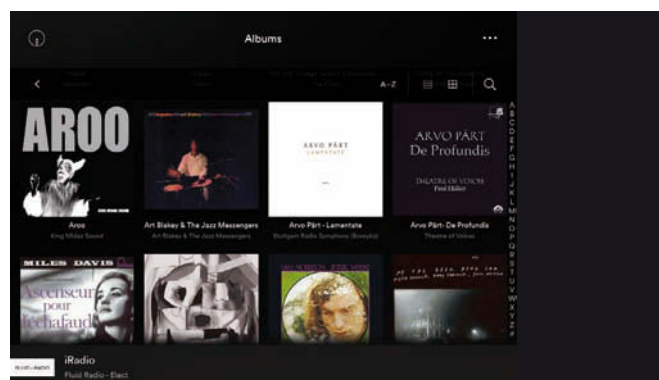
The computer has always been the basis of digital audio streaming, the least expensive way to dip a toe is to connect a laptop to a DAC via a length of USB cable. This approach is dubbed the 'push' approach, because the computer 'pushes' the signal to the converter. A streamer on the other hand 'pulls' the data from the source, usually a NAS drive. Using a computer has the advantage of flexibility in the choice of playback software and cost, but to get decent sound quality you need a dedicated computer that has been built with this purpose in mind. This tends to undermine the cheapness factor. In most instances, you need direct access to the computer to control playback, but software such as JRiver

“The CI industry used computer platforms and storage systems to develop means of producing multiroom audio without multiple sources, and companies including Linn and Naim started out in streaming this way.”



Media Center can be controlled with the JRemote app on a tablet. The only other limitation is that USB leads do not perform quite so well if they are over a metre or two long.

A streamer or renderer is built from the ground up as a dedicated audio component, so attention is paid to keeping out RFI through the use of linear power supplies and minimising jitter and the other ills of digital audio that the computer world is not bothered about. Streamers connect to a computer network, where they can pull audio data from a media server, generally a network attached hard drive or NAS with an operating system such as Twonky media onboard. Companies including Naim and more recently Melco offer higher quality servers that can also rip CDs and offer alternative connections alongside the RJ45 socket required ▶



“The network approach means the media server or storage device need not be in the same room as the player.”

► for connection to a network wired with Ethernet cable. For best results and high resolution formats a network should be wired rather than wireless, but as Sonos has proved wireless networks are good enough for many.

Another school of thought is to have the music stored on the player itself, eliminating the need for separate music storage, this is what happens in a Naim HDX and a variety of both high-end and budget products. It simplifies initial set up at the cost of flexibility. But, it does mean that the network is only necessary for control and grabbing metadata and so can be wireless without sonic compromise.

Networking

The network approach means the media server or storage device need not be in the same room as the player, and as NAS drives are not the quietest things, this is quite handy. It also means that multiple players can share the same drive, both wired and wirelessly. One of the nice things about having your music on a network is that any streaming device can access it; in my case that means the iPod Touch that plugs into the kitchen radio, but it could just as easily be a smartphone. And while you need a tablet or smartphone to use the control app for a dedicated streamer, that same handheld device can be both controller and player. Therein lies the rub of course; if you leave the iPad in the kitchen, it won't be on the sofa when you want to choose an album or playlist on the main system.

The playlist is another aspect of streaming that is very popular; essentially it's a means of collecting a selection of tracks in a list that can be saved. It's a bit like a compilation tape but a lot more flexible as you can have almost as many tracks as you like and you can have the same track on as

many playlists as you want. As an old school album listener, this is not something I have adapted to in truth: I tend to play tracks or albums, but rarely get around to building playlists, despite the ease with which it can be achieved. But I get the impression I am in the minority in this regard.

Formats

I mentioned formats earlier. There are many of these to choose from, but if sound quality is important then the list gets a lot shorter. The choice is essentially between those that losslessly compress the audio data such as FLAC and Apple's variant ALAC, and those that do not: WAV, AIFF, and, more recently, DSD. The reason for choosing the lossless formats used to be that they require about half as much storage space, but now that space is so inexpensive, that argument is less valid. What is more important is metadata: all the information about the track including artist, track title, album title, artwork, etc. FLAC, ALAC, and AIFF all support metadata, which means that if you transfer your music collection to a player that uses different software it will be able to display this key information.

However, WAV is regarded by many to be the best of the best. It's not Apple-centric like AIFF and it does not compress data, and so long as you stick with the same software, the metadata is available. It was the exclusive format of the Naim UnitiServe until last year. The thinking today has swung toward FLAC because of its portability and because a good streamer has no difficulty 'unpacking' the FLAC container to expand the data within. The fact that high resolution music files are sold in this format is a factor, but possibly more significant is that not many people can hear the difference on most streamers. Linn's position is that there is no audible difference. ►





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“As well as providing easy access to your own music collection, a streamer also opens up the world of Internet radio.”

► DSD

On the other side of this fence is that revival of the format that SACD was based on, DSD – a format for which very little mainstream original content is available, yet which has become the flavour of the season in the world of DACs. Even Naim has incorporated DSD compatibility in its NAC-N 272 streaming preamplifier, this despite the fact that the UnitiServe it sells to complement its streamers is not yet DSD compatible. You can get server software that will stream DSD however, Naim use one called MinimServer for its demonstrations.

Another approach to streaming hardware is exemplified by the AURALiC ARIES among a few others. The ARIES is a ‘bridge’, which is essentially a streamer without a DAC. It has USB output for high bit/sample rates as well as S/PDIF outputs on coax and optical. The absence of a converter and analogue output stage makes it less expensive than a high-end streamer, but theoretically able to compete with such things if you already own a serious DAC. There are not many bridges on the market yet, but a high-end British example turned up at the Bristol show this year; the Stack Audio Onset, with its dCS style casework, looks very promising.

Online sounds

As well as providing easy access to your own music collection, a streamer also opens up the world of Internet radio and streaming services. There are seemingly millions of net radio stations around the world that can be searched for by region or genre, and many can only be accessed online. If you are looking for niche programming, there is no easier way to find it. While sound quality is variable, it’s not a lot worse than other digital broadcasting. In some cases companies get exclusive access to higher quality streams: Naim streamers provide both Naim Radio and Radio Paradise at 320kbps, for instance.

Streaming services are more like an online library from which you can pick and mix tracks, albums, and artists. For sheer breadth of catalogue, it’s hard to beat Spotify but that is limited to 320kbps on its £10/month premium service or 128kbps otherwise. There are two services that offer CD quality streaming: Qobuz from France and Tidal (also known as ‘Wimp’) from Norway. The catalogues from both are large, if not in Spotify’s league, but don’t include certain major artists

(The Beatles are not represented, and neither are artists on the ECM label, which is perhaps more pertinent). Qobuz has a considerably larger classical library of the two and offers a 15-day free trial, Tidal’s trial is only seven days, unless you can pick up a voucher at a show. Both services cost £20 a month and sound quality is pretty good: not quite as good as your own library, but good enough to enjoy on a decent system.

Conclusion

Streaming has not quite scaled the sonic heights of the best analogue and digital sources, but being a young technology in audio terms there is room for improvement in the software provided by some companies. That said, it is 21st century audio technology that need not cost a fortune. I use streaming for the majority of my reviewing work; it doesn’t sound as good as my turntable, but it’s pretty damn fine and a whole lot more user friendly. +

STREAMING GLOSSARY

Control point: usually an app on a touch screen device that is used to select and play music

Ethernet: a standard for computer networking and the name given to the cabling used to create such networks

Gapless playback: continuous playback of multiple tracks without gaps between them

NAS: network attached storage, usually a hard disk drive controlled by a small dedicated PC

Media server: media storage device with server software onboard, such as a NAS drive

Metadata: tags in a data file that carry information about that file. In streaming audio this means title, artist, album, album artwork, date, etc

Playlist: list of tracks that you build up and save for future playback. Usually created in the control app

Renderer: a streaming source component/player

Ripping: the process of copying music from an optical disc. Turning a CD into a file that can be streamed requires it to be ripped

Switch: in network systems, a junction that shares data across its outputs. Gigabit switches are preferable for audio networks

UPnP: Universal Plug and Play, the protocol for sending data around a network



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ReQuest Audio

The Beast Music Server

by Rafael Todes

*“Music has charms to soothe
a savage breast”* WILLIAM CONGREVE

The Beast. An extraordinary name! It rolls off the tongue with a plosiveness: it summons images of Beowulf and other epic poems, and conjures up an image of substantial might. Shakespeare refers to a beast with two backs. But does the bite live up to the bark?

The Beast was conceived when Gerhardt Schneider, the Swiss manufacturer of Acoustic Lab speakers, approached US company ReQuest (which builds Linux-based music servers) with the idea to build the ultimate high-end server. Following the financial input of a private investor, ReQuest Switzerland AG was founded, which then bought its US partner. MSB joined the party and the Beast was born. It was designed in Bellach, near Bern, with the express purpose of producing a best-of-breed animal, where money is no object.

The Beast is beautifully constructed. The case is hewn from solid aluminium billet. There is a high-quality seven-inch touch-screen window that displays images of the ripped CD covers in miniature, and allows a useful amount of the server's functionality to be accessed without using an iPad or PC as an interface. It is really convenient to have a touchscreen as a usable option even in our iPadded world, but this is not always the case with servers I have known. There is a slot at the front for easy CD ripping. Ripping takes around four minutes, and utilises the Gracenote database via a wired network connection at the back. While Gracenote is not entirely comprehensive for album artwork, its other metadata parameters seem to be nearly always correct. To activate the player from an iPad requires the server to be connected to a network. The iPad uses a web browser to access the player and not, as with most servers, an App. So after typing in an IP address, which can be found through the touchscreen settings, you simply make an icon on the iPad of the web address to access the Beast remotely. The iPad interface gives the user most of the important functionality required to use the player for everyday use.

You can search by using the usual suspects, including 'recently added' and in fact the data has been organised to

meet the hardest of asks, that is classical: search by artist, conductor, or orchestra. A greater slice of functionality comes by using a PC to log on to the same IP address, whereupon you have the ability to do things like change artwork, and load files stored on a non-NAS drive. This is in effect transferring files over your network, and is a great deal slower than uploading via USB. It took a couple of overnight sessions to upload some of my own high-resolution material to the player.

The Beast uses solid-state hard drives; it comes with 1TB or 2TB of on-board storage and can cope with additional NAS drives. However, there is a claimed sonic advantage to using the internal drives, and ReQuest recommends these drives be used for high quality files, with the NAS additions for the lower quality material. The machine is virtually silent in operation as there are no moving parts contained within, save a small but silent fan. The Linux operating system has been written in-house; it works with a rapid boot-up, and never once crashed on my watch.

The rear panel, as expected, has digital outputs in the form of RCA, AES/EBU, BNC, Pro I²S, (a standard used by MSB), balanced and single-ended analogue outputs, and – perhaps surprisingly – analogue inputs, which may be useful to connect a turntable and a CD player. Equally surprisingly, the server doesn't have any digital inputs, on the grounds of sound degradation rather than oversight. This makes life a bit more complicated if you don't possess a high quality DAC, but you wish to play a digital source.

There is scope for the addition of a high-quality clock, although as there are different versions of the Beast, the need for aftermarket reclocking becomes a touch academic. The 'entry-level' Beast eschews even a DAC, while the full package includes an MSB DAC and Galaxy Clock, which has noise performance with a guaranteed jitter measurement (at the worse case) of less than 77 femtoseconds (0.077 picoseconds). Anyone who has played around with clocks and CD players will know about the dramatic difference a good clock can make to the bass performance, soundstage, and overall timing of the sound, and this is no exception.

ReQuest has gone to enormous lengths to sort out the Beast's power supplies. Power is re-generated and is completely reconstructed. For the digital board, there are also temperature-stabilised supplies. ▶



► The Beast will play WAV or FLAC files up to 384kHz, and up to 32 bit, and all the current four formats of DSD. It will even stream video with the addition of an optional module, having the ability to rip and store DVD and Blu-ray formats. It can be integrated into a home automation system, such as Crestron, AMX, Control4 etc, and has the ability to synchronise multiple iTunes accounts, as well as the ability to exchange information with other like-minded Beasts around the world over the Internet. Put simply, if it's digital entertainment, The Beast takes it in its stride.

In case of difficulties, ReQuest offers an online support system called Arq-Link, whereby a technician can sort out a problem remotely. This level of service is incredibly useful, particularly at the early stages of Beasthood, and is what I'd expect from a product at this price range.

To begin listening, I started with the *Dies Irae* from the Verdi Requiem, as conducted by the late Sir Colin Davis, [Hyperion, 24bit/48kHz]. The first thing that hit was the ability of the Beast to recreate that massive sea of voices of the choir, without any harshness, and with a weightiness worthy of the biggest of big beasts. The timpani – which battle with the orchestral shrieks – had immense authority, the sound for that brief second is taut, precise, and vicious: no overhang. The soundstage is huge and the ire of the music is gripping. Tonally the sound is quite mellow, closer to the palette from great analogue and not typical for digital fare. There is deathly-black silence as a backdrop, and although the sound is incredibly vivid, it is not in the slightest fatiguing. This seems a far cry from the 'Mac 'n' DAC' systems I have heard. The Beast is altogether much

more sophisticated, and maximises the potential of any higher resolution format. It doesn't sound like other computer audio systems I have heard recently, and really shows what solving the various audio conundra can achieve. There is no doubt for me what the stability of a clock source is doing in combination with a first-rate DAC. What is impressive though is that the server's streaming engine sounds so good. On cheaper, less skilfully designed streamers, there is often a lack of definition to the soundstage. It presents like blancmange; smudged and uninteresting. The Beast is the polar opposite. The soundstage is finely etched, and there is texture to the sound. I find that a mediocre streamer makes me lose the will to listen. It does so little to convey nuances in the music, and I find it hard to stay with the narrative of the music. A great live concert has that ability to draw you into the sound and emotional world of a composer, enabling you appreciate the palette of colours and textures of the instruments and voices. This server has many characteristics of live music experiences to my mind and ears.

Turning to a CD ripped to the player, on hearing Bryn Terfel in the *Tutto Mozart* album [DG] singing 'Bei Männern', a charming duet from *the Magic Flute*, I was astonished by the sheer naturalness of Terfel's voice. It had a reality to it that is revelatory. Every tiny nuance in his expression came across. The accompanying Scottish Chamber orchestra breathed colour into every phrase. I had a sense of the space of a large hall, with a vast quantity of air between the players and singers. It isn't music whose demands are going to push a system to its limits, but it is just effortlessly beautiful. The server is just doing things right. The timing between the ►



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- orchestra and singers is impeccable, and there is a spring to every phrase. The player helps with its ability to do micro phrasing, to suck the listener into the heart of the aria.

A favourite recording of mine is Mozart's 18th Piano Concerto, as played live by Daniel Barenboim and the Berlin Philharmonic [Teldec, CD]. Mozart Piano Concerti are very difficult to record, as you have a soloist in front, who often spars with woodwind players sitting a fair distance behind.

The Beast turned into something of a pussycat for this, of the best audio kind. Mozart's long and beautiful phrases are constructed so that they need the tiniest of inflections to make the narrative work. The human ear can pick up the smallest of volume changes, which then creates the emphasis and hence the meaning of a phrase. I have heard numerous pieces of digital equipment that can do the broad brushstrokes well, but miss out on the subtleties of the musical line, and fail to engage me. The Beast has superb micro control of the phrasing and dynamics, while presenting the orchestra in a gently persuasive way, which in this concerto is highly seductive. The presentation is lithe and witty, just as I think Mozart intended it. Due to the tightness of the Beast's bass control, there was good attack at the beginning of bass notes. Chords started as convincingly at the top as the bottom, and as a result, the harmony spoke with one impulse, not a smudged version of many impulses. This is what people call 'timing well', and the Beast really does this superbly. When it's not quite right, the music sounds as if it lacks conviction, and coherence. The Beast's presentation is highly coherent, and for these reasons I would call it 'musical'.

Ravel's 'Tombeau de Couperin' is a re-scoring of some piano pieces dedicated to a couple of the composer's friends that died during the First World War. On the Decca/Solti recording, the Rigaudon is beautifully crisp, and the orchestral space massive with plenty of air between instruments. The double basses grunt with complete control, the woodwind colours are crystalline, and there is tremendous dynamic energy to the playing. I had the feeling that the Beast was 'allowing' this sophisticated ensemble playing to happen effortlessly. There seemed to be no obstacles in the way, and this was among the best renditions I have heard of this work, CD or not.

I have waited a long time to find a way of removing the huge quantities of smashed CD jewel cases from my shelves, with a server that could punch like a good CD player, but to date my search has been fruitless. ReQuest's The Beast changes that: it challenges and can even better my Esoteric K-05 CD player, and that comes from a self-confessed CD stick-in-the-mud. The Beast certainly justifies its sobriquet for its gravitas and the sheer awe it inspires. It has an alter

TECHNICAL SPECIFICATIONS

Type: Solid-state music server with built-in storage optional DAC and Clock

Storage: 0.96 TB or 1.92TB SSD

Analogue Inputs: Balanced XLR Input (pass through or controllable) over the optional analogue Diamond Volume control.

Digital Inputs: None

DAC Resolution/Supported Digital Formats:

DSD all 4 different formats, WAVE/FLAC

44.1/88.2/96/174.4/192/384 and 16bit/24bit/32 bit

Analogue Outputs: One stereo balanced (via XLR connectors), one stereo unbalanced (via RCA jacks)

Digital Outputs: coaxial S/PDIF (via RCA jack), TOSLink, PRO i2S, BNC

Frequency Response: Not specified.

Distortion (THD + Noise): Not specified.

User Interface: 7-inch display (on main unit),

Apple iPad, iPhone, Android, PC or Mac

Other Features: UPnP server

Dimensions (HxWxD): 19cmx44cmx46cm

Weight: Not specified (weight depends upon configuration)

Price: from £29,900

Manufacturer: ReQuest Audio Switzerland AG

URL: www.requestaudio.com

Distributor: Absolute Sounds

Tel: +44 (0) 20 8971 3909

URL: www.absolutesounds.com

ego: lithe, quick footed, and an intelligence, which is always present. It is eye-wateringly, but reassuringly, expensive, but The Beast is the first vision of a post-CD world that offers hope to even the most demanding of music lovers! +

“No beast so fierce but knows some touch of pity. But I know none, and therefore am no beast.”

WILLIAM SHAKESPEARE,
RICHARD III, ACT I, SCENE 2

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Nagra HD DAC

by Alan Sircom

There's still a buzz about Nagra. Even those who have racked up a lot of miles on their audio clock get a little worked up over a Nagra product, and when that product is the first of the company's new cost-no-object range, the long-awaited HD DAC, it's hard to keep your feet on the ground.

Let's get the aesthetics bit out of the way first: you have to be some kind of cold-hearted anti-geek not to love Nagra's industrial styling. With the large recessed dials, switches, and that famous 'modulometer' on the front of both DAC and MPS power supply, the HD DAC has the classic look of a product made back when 'built to last' meant something. And yet, it's not simply retro styling for its own sake; everything is there for a purpose. But regardless, it's hard not to be impressed by the look and feel of these solid pieces of audio architecture.

However, it's also important not to let the whole 'it's a Nagra' element swamp the sophistication of what's going on beneath that solid alloy case. This is a 'back to the source' digital project, leveraging years of professional digital audio engineering to basically start again with digital to analogue conversion. The professional audio side becomes apparent at the point of contact for a datastream; all the HD DAC's digital inputs are filtered before being passed to a multiplexer circuit. This means the AES/EBU input on XLR and the S/PDIF inputs on BNC and RCA connectors each has its own individual transformer. This might seem like overkill to most digital companies because a digital datastream is not influenced by the impedance and level of the signal. However, the same does not apply to the electronics that process the datastream, and using the kind of best-in-the-business grade of transformers that Nagra can get for the task means the datastreams from each input are 'presented' to the digital processing section in the best possible condition.

The audiophile intent begins after these balancing operations, however. As suggested previously, the company went right back to first principles. Nagra sees the quantization noise of 16-bit/44.1kHz digital audio, and the methods used to quell that noise, as one of the big problems of the CD age. Crude brickwall filters that block out any noise above 22.1kHz can undermine phase above 10kHz, the company suggests, while conventional oversampling and interpolation methods are a cure that Nagra believes is often worse than the disease.

Nagra instead concentrated on the goals of getting the extraction and converting of data absolutely right, without resorting to 'cheating' (oversampling). Ultimately, this led to Direct Stream Digital, and Nagra (in association with DSD pioneer Andreas Koch) developed its own Sigma-Delta DSD processing, on a custom 72-bit Field Programmable Gate Array. Add to that a custom time-correction algorithm, in place of the usual demands for atomic clocks at this grade, to keep this DAC temporally precise, and the result is the removal of that quantization noise up to so far beyond the audio band, its impact is effectively completely eliminated.

This conversion schema is a very clever one indeed. Normally, DACs process DSD by passing the datastream through a low-pass filter and then to the same PCM converter used for 16-bit or 24-bit digital words; a simple, but effective way of decoding these signals for more real-world audio systems. When you ascend to the high end, typically DSD and PCM are routed through entirely different processors, each suited for the task in hand. This works well, but when one DAC is in use, the other sits there gently propagating self-noise through the system, and steps (typically heavy, expensive steps) have to be taken to manage this. Nagra does it differently, turning PCM into DSD, running at 5.64MHz. That's a rare pathway (in hardware, EMM and Meitner follow the same route, and you can run JRiver that way in software, if you have a hard-as-nails computer up for the task), but that means off-the-shelf digital conversion is simply not available.

Bizarrely, one of the things that is frequently overlooked in DACs is the 'to analogue' part. Perhaps it's not so bizarre; digital engineers think in the digital domain, and can sometimes view the analogue section as something of a 'done deal', but it can mean a very good DAC in the digital domain can have a relatively 'blah' analogue output stage. The Nagra HD DAC is not one of those devices; the thoroughness applied to its digital processing applies just as much to the analogue domain. This is perhaps understandable given Nagra's heritage in professional recording, because the company retains, "a culture of total intransigence when it comes to respecting the integrity of sound."

There are two key points to this intransigence. First up, the analogue section is designed to be 'phase perfect' throughout. This should be a given – we spend an inordinate ►

“Let’s get the aesthetics bit out of the way first: you have to be some kind of cold-hearted anti-geek not to love Nagra’s industrial styling.”





► amount of time and energy ensuring the digital input from a digital source is 'bit perfect', why shouldn't the same apply to what happens inside the DAC? However, once you include any kind of complex filtering in the input stage, phase integrity is 'difficult' ('difficult' being the polite form of 'damn near impossible'). Moving from a PCM to a DSD-based architecture allows Nagra to eliminate that input stage filtration, and the company instead invested considerable R&D time into group propagation delay. The result is a DAC with the reactions of a ninja cheetah, even under significant dynamic swings.

But then, we return to transformers. Where most DACs rely on voltage gain from active electronics, Nagra uses custom-wound, custom-designed interstage transformers, which took the company months to perfect. Fed by ultra-rapid drivers, these transformers mean a lower impedance signal path, making this the perfect internal environment for the valve output stage. The use of a single JAN 5963 double triode (essentially a 'super' ECC82, with beefed up anodes to give it almost solid-state bandwidth and signal-to-noise ratio) in so sophisticated a device may seem odd, but it was selected because Nagra claims it found no way of making a solid-state output stage with the same degree of harmonic integrity.

As ever with high-end devices, the individual components come in for some special attention. Which is why you'll see coupling capacitors with some very distinctive materials (such as a beeswax dielectric) inside, all selected for their performance in that particular section of the DAC. Also common to high-end devices, close attention has been paid to the power supplies, and the HD DAC features 25 separate power supplies, driven by two separate external power supplies as standard. I suspect most people who have gone as far as the HD DAC, will go the extra mile for the optional battery MPS supply, and that was how the HD DAC was supplied. The comparison in size was interesting here; the MPS is in the standard Nagra small alloy box, and while Nagra has retained similar height and width, it had to make the HD DAC considerably deeper.

Essentially, the way to think about this DAC is Nagra treats digital audio like an obsessive-compulsive equerry might treat the Queen – with great respect, but also with absolutely no conception of 'good enough'. Nothing is 'good enough' on the Nagra HD DAC. Other DACs do

'good enough'. Nagra shows that 'good enough' isn't 'good enough,' after all! Of course, that implies your approach to the digital input the Nagra receives is equally uncompromising, but this is less 'fussiness' on the HD DACs part and more that music (and especially music played through the Nagra) commands respect, and this is the way respect should be shown. That means the right transport, the right computer, the right program, the right music files, even the right cables.

My sample arrived fully run in, from the late 2014/early 2015 show circuit. So the only waiting I had to deal with was the 30-second warm-up/diagnostic cycle the HD DAC takes to power up, and the 15 minutes or so it takes to come on song after that. Then, you had a full evening's magic before the battery pack began to need charging, and the rest of the evening in a state of near-Nirvana. The quality drop from battery to mains power is relatively small, but is like reaching for a Château Lafleur, after drinking a Petrus.

There's a meme floating round the internet that digital audio is the great leveller; that it closes the gap between the best and worst digital devices. Bits is bits, after all. In truth, the meme is not without some justification; the difference between a £100 turntable and a £10,000 turntable is fairly easy to identify, and very easy to justify, but the gap between digital audio devices at the same prices are not quite as significant. The Nagra HD DAC takes that meme apart.

Digital played through this DAC doesn't sound like all the others, and it doesn't sound 'digital'. It has a richer, more harmonically organised, and just 'organic' sound compared to most other digital sources. This makes most digital replay sound as if it were taking the music apart, where this portrays it as a contiguous, flowing 'whole'. That said, it's still deeply analytical, and with the kind of systems a DAC of this calibre is likely to work with, can highlight the structure of the music, the quality of the musicianship, and the sensitivity of the recording engineers. However, it does this analysis in that 'lean forward' manner one gets at a really good concert, rather than a mechanical, 'air crash investigator' approach.

The natural partners for the HD DAC are well-recorded jazz and classical, because the sense of musical 'flow' the Nagra creates is easier to find in these genres. But that doesn't mean it's somehow soft-edged and too legato for anything amplified or electric. I have a suspicion this might be the one ►



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▶ and only time this music is played through this DAC, but it sounds great playing 'Endorphin' by Burial [*Untrue*, Hyperdub], as it plays those crackly electronic sounds, the sampled voices, and the huge bass with a sense of insight and focus that is often skipped over. But where it works truly remarkably is on slower, more contemplative pieces, and especially those slow-build works where it starts *ppp* and ends *fff*, such as 'Mars' from Holst's *Planets Suite* [Zubin Mehta, LA Phil, Decca] or at the other end of the spectrum, the achingly beautiful 'Lift Your Skinny Fists Like Antennas to Heaven', from the album of the same name by Godspeed You! Black Emperor [Kranky, CD]. If your system and ears can handle it, the Nagra HD DAC has dynamic range enough to spare, and that 'harmonic integrity' the company discussed in making a tube output stage shines through. It's one of those rare devices that demand your full attention; turning the music off or even 'down' becomes an affront to music, and anything that breaks the spell is apt to get shouted at.

As a consequence of this 'holistic' approach to digital music making, the listener is drawn deep into the piece playing, in the manner of good analogue systems. This is more than just soundstage or detail, and is a lot more than the tonal balance or frequency response. For the want of a better term, this is about 'mojo'; the Nagra HD DAC has lots of mojo. Mojo in this respect is the difference between The Beatles and The Bootleg Beatles; no matter how close the alternative gets, you just know when you are listening to the real deal. And the Nagra HD DAC sounds like the real deal.

Walk this back to 'surface' observations. The Nagra HD DAC has excellent coherence from the deep, powerful bass to the unforced, grain-free treble. It has sublime detail and you'll hear things in your music you didn't know were on the recording. Vocal articulation is first rate, drawn out of a wide dynamic range, top-to-toe coherence, and an absence of background noise. The DAC is transparent, melodically, harmonically, and temporally spot on, and has the kind of flat frequency response that makes the Bonneville Salt Flats look like the Rockies. And all of that applies just as much to the powerful, servo-controlled, capacitor-free headphone socket as it does to the rest of the outputs; my HiFiMAN HE-500s, the oBravo HAMT-1, and even the Ultrason Edition 5 have never sounded so right!

We are duty bound to find a downside to any product, but in concluding the review of the Nagra HD DAC, I simply couldn't find one. It represents a leap in digital audio performance that doesn't happen that often. It extracts a lot from existing 16-bit, 44.1kHz files, and even shows to a



TECHNICAL SPECIFICATIONS

Digital inputs: 1× RCA S/PDIF, 1× BNC S/PDIF, 2× XLR AES/EBU, 1× Toslink Optical,

1× Audio USB (mode 2), 1× I2S (Nagra format)

Signal handling: 5.6MHz/6.2MHz, 72 bits

Analogue outputs: 1× RCA stereo, 1× XLR stereo (optional balancing transformers)

Output level: 1.3 or 2V RMS (for a digital signal at 0dB FS)

Noise: -128 dB linear (without filter)

Distortion: < 0.02% @ -20 dB FS

Harmonic Distortion: < 0.03% @ 192 kHz

Bandwidth: 5 to 40 kHz, +0/-1 dB

Diaphonics: 99 dB (at 1 kHz)

Dimensions (WxDxH): 280×350×76mm

Weight: 5 kg (without power supplies)

Price: £17,950 (as tested, including MPS)

Manufactured by: Audio Technology Switzerland SA

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high-resolution sceptic what DSD is capable of. OK, if there is a shortcoming, it's that price tag. It's not overpriced – if anything, once you've heard what the HD DAC can do, the price becomes irrelevant – it's just that, for me, that price tag means I have to put it back in its boxes soon. And I'll miss it greatly. Highly Recommended! +

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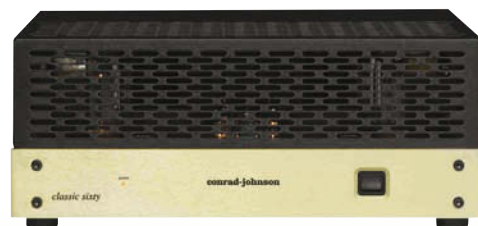
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DigiBit Aria Mini music server

by Steve Dickinson

If you're new to music servers, as I am, then I commend to you the DigiBit Aria Mini. Partly, that's performance-based, of course, but a goodly chunk of my approval stems from the fact that setting it up is barely any more taxing than it is for a conventional CD player. The Aria Mini, junior sibling to the Aria, offers a significant percentage of the bigger product's performance. DigiBit has eschewed the Aria's fancy, and weighty, casework in favour of an unconventional, upright case of interesting, asymmetric profile (it looks a bit like one of those awards big companies will give out to the Southern Regional Salesperson of the Year). It also doubles as a place to rest your iPad, which you'll be needing to control the unit. DigiBit has made some other savings in shrinking down the Aria – most notably the use of a wall-wart switch-mode power supply and fewer outputs – but the electronics hardware, and software remains pretty much the same for both units.

On opening the box, the first thing a new owner sees is a roughly A3-sized sheet of printed card with basic setup instructions. The legend "Enjoy music in a few minutes!" is the encouraging opening line, followed by

a clear step-by-step guide. As a long term Windows PC user, you will imagine my scepticism that this could possibly go to plan, and my consequent surprise when it did exactly that. I estimate that from unpacking the unit to hearing music took me perhaps 10 minutes, and every stage of the quick setup guide worked exactly as described.

Technically speaking, the unit comprises a low power consumption, industrial-grade motherboard, and features a Windows operating system that has been stripped back to essentials to minimise disruption to sound quality from extraneous processes. There is an onboard DAC capable of handling PCM to 384kHz at resolutions up to 32 bits, or DSD 64 to 128, outputting ▶

"I estimate that from unpacking the unit to hearing music took me perhaps 10 minutes, and every stage of the quick setup guide worked exactly as described."





“Like setup, ripping was a doddle, and can be done in the background while listening to stored or streamed music. A typical CD takes perhaps five minutes to rip; the drive starts automatically when you load a disc and spits it back out again when finished.”

► analogue via conventional phono connectors, or a USB digital output to an offboard DAC of your choice. The review unit contained a 2TB hard disk drive, but a 1TB solid-state disk is an option. The chaps from DigiBit pre-populate the disk with a small selection of music, mainly to help get you started straight out of the box, but ripping your own music is obviously the order of the day. Streaming from an external NAS drive or from online sources is available via the LAN connection, which you'll also need to connect to the Internet for control of the Aria Mini, and to download metadata for your ripped disks. The unit also supports Apple Airplay, and streams quite happily via the ubiquitous iPad.

The Aria Mini doesn't have an inbuilt optical drive, so ripping discs requires the use of an external USB drive. This is optional, but a small Asus DVD unit is recommended and was shipped with the review sample. The power supply is also external, and in this case a wall-wart; a linear power supply, as fitted internally to the Aria, is said to be expected soon, as an optional upgrade.

Like setup, ripping was a doddle, and can be done in the background while listening to stored or streamed music. A typical CD

takes perhaps five minutes to rip; the drive starts automatically when you load a disc and spits it back out again when finished. Having ripped the disc, the Aria automatically searches various online databases depending on the genre of music being ripped, downloads the cover art and other metadata (at no cost to the user), and presents you with the finished article in your music library. I only managed to flummox the unit once: the Graham Fitkin album *Flak* [Factory] ripped without any problems, but the Aria Mini failed to locate the cover art or metadata, presenting me with just an icon in my music library. The album plays just fine, the track listing is correct, and I could easily manually add artwork and metadata. The metadata can be edited and extended, custom fields added as the user chooses, and these can be used to categorise and catalogue your music collection. Track data can also be edited. The Aria rips to FLAC by default, and cleverly can be set to output hi-res files downsampled to whatever your DAC can handle if needs be. The stored music is presented in various different ways, sorted by metadata fields such as artist, album, genre, composer, period, or bit rate. DigiBit's first great success was the Sonata music server program, which is commonly considered to be the best system for those of us who listen to a lot of classical music, thanks to its enlightened metadata wrangling and search facilities. It's clear that the company has classical enthusiast's interests at heart, and that is enough to endear the DigiBit Aria Mini to many still clinging to their CD collections.

The unit also supports multiroom playing. You can have various zones each playing different music simultaneously. This isn't something my home is equipped to test with any rigour, but streaming one file to my iPad while playing another through the system was trivially easy.

So, how does it sound? Straight out of the box, via its own DAC and into my Focal 1028Be's via Albarry's preamp and M1108 monoblocs, it sounded very good indeed. Fundamentally, the music played through the Aria Mini has vitality, decent dynamics, and timing. It majors on clarity rather than body and substance. Fitkin's *Flak* is a powerful and rhythmically complex piece for two pianos and through the Aria Mini's own DAC it is entertaining, although the pianos are a little harder and more aggressive in tone, and there is less sense of energy in the louder passages (they are merely louder compared to my reference point). This, it must be said, is an unfair comparison, because that reference point is a dCS Puccini CD player with its own U-Clock: a dedicated CD/SACD player that is considered one of the best in the business. You could also buy seven Aria Minis for the cost of one Puccini/U-Clock combination, so it should be better, but what impresses about the Aria Mini is how much of the ►

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Neil Gader, The Absolute Sound, Newport Show 06-06-2014

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Home Theater and High Fidelity, Newport Beach Show 2014

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Anthony Kershaw, Audiophilia 16-07-2014



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► core of the music is retained even in comparison. The rhythmic complexity is well portrayed on the Aria Mini, even if the subtle timing cues, and the way the two parts work together and against each other, is rather glossed-over.

What's more, I think a lot of the sonic gap between these two devices falls to the on-board DAC on the Aria Mini. This allows some considerable room for improvement, where if the server part of the deal hobbled the player, improvement would be fairly limited. Another track from the same *Flak* album, the imaginatively-titled 'Piano Piece Early 89', relies on a series of chord progressions which never quite resolve as the listener expects. This piece is all about delayed gratification and the build up of expectation, so that when it does finally resolve, the rewards for the listener are magnified. This is not teased out well by the Aria's DAC and the music makes less sense as a result.

The onboard DAC and output stage is certainly good enough to make differences between 16/44.1 PCM and higher resolution files abundantly clear, but the extra resolution and body in the hi-res files cry out for a better DAC.

It was time to try the Aria Mini via USB to an offboard DAC, so I connected it to the Puccini's DAC via the asynchronous USB input on the U-Clock. The sound quality was immediately significantly elevated. The dCS' familiar agility, detail, and texture was there, and timing had that 'locked together' feel that I think dCS does so well. All of which is entirely expected, of course.

Except that it's not quite that simple. I tried various USB cables, from freebies (briefly!), through mid-priced Nordost Blue Heaven, which gave very good results, before eventually settling on the excellent £500 Linus cable from The Digital Music Box. This exercise got me progressively closer still to the performance I'd expect from the Puccini player. Ultimately, I preferred the sound of a CD played live through the Puccini's own transport to the ripped versions of the same on the Aria Mini, but the differences weren't quite as massive as the price differential between them might imply.

'Smells Like Teen Spirit' from The Bad Plus album *These are the vistas* [Columbia] was, when played directly from CD, more purposeful, with more drive, energy and emphasis, particularly from the bass and percussion. The ripped file was a touch aimless in comparison, bass and percussion not being quite as 'locked-in' to the music. And, to the extent that any Bad Plus track can be accused of having a tune, the rip was not as tuneful as the CD. At the opposite end of the jazz spectrum, the more contemplative tones of the Tord Gustavsen Ensemble in 'The Swirl' from *Restored Returned* [ECM] was sinuous, the vocal was intimate, dark and almost conspiratorial, there was a strong sense of intrigue – a very noir vibe.

Comparing hi-res files against ripped Red Book CD on the Aria, I found that with the hi-res files, there was a greater sense of solidity and definition to instruments and performers, which tend to coalesce into their own space more distinctly. This happened whether listening via the Aria's own DAC, or through the dCS Puccini at 24/96 resolution ►



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- (I haven't upgraded my dCS Puccini for DoP replay yet). But again, it's not quite as simple as you might expect.

Interestingly, I found the difference between high-res downloads through the Aria Mini and the CD played through the dCS to be less than clear cut. Diana Krall's 'Lets fall in love' from *When I Look Into Your Eyes* [Verve] was, through the hi-res (20/96) file, blessed with creamy smooth vocals, but cursed with a subtle impression that things had been airbrushed. No surprise that many dismiss the delectable Ms. Krall as easy listening... The CD had more swing, snap, and flair, with more texture to the vocals, and the piano playing was much more nuanced and expressive. Similarly, Robert Plant and Alison Krauss 'Killing the blues' from *Raising Sand* [Rouner Records] gave, via CD, more sense of how the two voices work together. The bass had more weight and solidity and the overall impression was of a more tuneful rendition, while the hi-res file was, in comparison, not really conveying how the two singers modulate their voices to work in partnership. Conversely, a 24/88 file of Billy Joel's 'An Innocent Man' was more solid and convincing than the CD, with more 'snap' to the finger clicks and the harmonics played on guitar were more subtle.

This suggests to me there is no clear-cut 'winner' in a straight fight between CD-quality and high-resolution audio. In my opinion, the best works on a case-by-case basis. This also suggests the Aria Mini is capable of genuinely excellent performance, and to my mind it comes substantially closer to the sound quality I can get from my high-end CD player than any other computer audio system I've yet tried. And this was with the standard-issue wall-wart power supply.

Late in the proceedings, a development linear PSU arrived and I had the opportunity to replace the standard switch-mode PSU for a few days' listening. This had a significant and positive effect on performance, bringing a greater sense of ease and naturalness to the proceedings. It will not make the difference between 'like' and 'not like', but it does turn 'like' into 'like a lot'. It looks likely to be available quite soon as an extra cost option on Aria Minis and I'd urge purchasers to try it as it does raise the Mini's game quite usefully.

In conclusion, then, I really liked the Aria Mini, for its ease of setup, the simplicity and efficiency of the ripping process, and the simple, flexible, and intuitive user interface. The abilities of the onboard DAC are good, on a par with a respectable CD player, but to really get the best out of it an external high quality DAC is going to be necessary. Doing that, the sound quality is elevated much closer to the potential of whatever DAC you're using. While there is still something which holds back ultimate performance, in musical terms,

compared to a CD played through a first class player, in a more price-sensitive context, the Aria Mini fares very well.

As a way to add flexibility to a system, multiroom capabilities, and some backup and redundancy to one's music collection, the Aria Mini would certainly meet my needs. I may be a bit of a Luddite in still preferring CD, but the Aria Mini got closer than most, and I don't see any obvious gaps to the Aria Mini's portfolio and I'd be very happy to use one. I suspect most people would feel the same. +

TECHNICAL SPECIFICATIONS

Type: Music server/streamer with multizone support

Storage capacity: 2TB (2.5" silent HDD) or 1TB (SSD) (operating system on separate SSD card)

Software: Windows Home Server 11 (Linux planned for 2015); JRiver MC19; dBpoweramp (ripping).

Databases: Rovi, GD3 and SonataDB (for classical) (charges paid by DigiBit) and two alternative free databases: Freedb and Musicbrainz

Inputs: USB digital; Apple Airplay; external DVD-R; external USB HDD; 1 RJ45 (LAN)

Digital outputs: 1 USB; 1 RJ45 (LAN)

Analogue outputs: 1 pair, unbalanced RCA line level (2.0V output)

Supported file formats: Uncompressed (WAV, AIFF) and lossless (FLAC, ALAC); DSD, DSD × 2

Onboard DAC: Burr Brown 1795; PCM to 32 bits at up to 384 KHz and DSD64/128

Signal/Noise ratio: 106 dBA

Clock accuracy: 10ppm 0°–50°C, typically 2.5ppm at 25°C

USB link: asynchronous, USB 2.0 Audio class compliant

Dimensions: 260 × 285 × 130mm (W × H × D)

Weight: 2.5Kg

Price: Aria Mini, no storage £1995; Aria Mini, 2TB HDD £2295; Aria Mini, 1TB SSD £2795; external linear PSU approx £350 (to be confirmed)

Manufacturer: DigiBit

URL: www.digibit.es

Distributor: Auden Distribution

URL: www.audendistribution.co.uk

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AVM Evolution SD 5.2 preamp/streaming DAC

by Alan Sircom

AVM's Evolution range is the company's 'performance' line. It is set above the two Inspiration integrated models, but below the cost-no-object Ovation line. To many, that represents the sweet spot, combining all the best properties of the high-end range without significant compromise, or big price tickets. But it's a big sweet spot, with the Evolution range spanning 13 models: two CD players, two DACs, two receivers, three integrated amps, two preamps, one stereo power amp, and a set of mono power amplifiers. We went for the big Kahuna, the top Evolution SD 5.2 streaming DAC (with built in tube line stage), and it came coupled with the MA3.2S mono power amps. We're focusing primarily on the SD 5.2, however.

There's good reason for this focus. The SD 5.2 represents yet another way the future of audio encroaches on our present. A few years ago, products were neatly delineated: DACs were DACs, preamps were preamps, and so on. That's all changing. This DAC can be used as a streamer, or even a preamplifier. In fact, it will probably be used as all three. While there is still an argument to say this whole new world of streamed and networked audio is little more than an extra shelf on your

equipment rack, devices like the Evolution SD 5.2 periodically come along and challenge that concept. Rather than adding to the kit list, this potentially slims down your equipment list by combining several key devices in one.

The SD 5.2 also points to the process of potentially winding down line-level analogue sources. This is to many people all they need from a preamplifier today; two line level inputs, with all the digital audio sources dealt with from inside the one box. Why just two line inputs? Because the chances are the only analogue audio sources you are still using today are a turntable and maybe an FM tuner. Everything else is now in the digital domain, and we possibly need to switch our thinking from 'preamplifier' to 'hub'. And the SD 5.2 is a digital hub that comes with two line inputs and a tube output stage. In 2015, that counts as 'job done!'

This 'digital hub' aspect should not be downplayed. There are seven digital inputs on offer, here. They range from conventional S/PDIF optical and coaxial inputs, through AES/EBU, USB (Type A and B), and LAN/WLAN network connections. It can process virtually anything from MP3 up to 32bit/192kHz PCM and 2.8MHz DSD, is UPnP and DLNA compatible, and it can stream an internet radio source via



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► vTuner. It has 'on the fly' switchable digital filtration. It even has tone controls and a decent Class A headphone amp. It also features an optional RC9 bi-directional remote handset common to a number of systems (such as Cyrus and Electrocompaniet), or its own RC S app for iOS and Android.

The analogue side is well covered, too, as the DAC features the same line stage used on other Evolution devices. This means it features AVM's own custom made AVM 83T version of an ECC83 double-triode in the line stage, with its own high voltage generator supply. The SD 5.2 has the option of balanced or single-ended output. We went the XLR route because it sounded moderately better, especially with the MA3.2S power amps. These deceptively powerful small boxes pump out an impressive 420W per channel, thanks in part to using switching (Class D) circuits. However, the company has chosen a more conventional power stage for the MA3.2S, with each one sporting a 750VA transformer and more than 50,000µF of reservoir capacitance.

Installation is (mostly) straightforward, with only pairing the RC 9 to the SD 5.2 requiring a cursory read of the manual. Pairing requires you to fully power the SD 5.2 down, navigate to the pairing command on the handset, then power up the SD 5.2 as you press 'pair' on the handset. The rest is automatic.

In a way, reviewing the SD 5.2 is four reviews in one; as a preamp, as a DAC, as a streamer, and as a complete entity. But, equally, it should be considered as just the one device, because that's what you are paying for. If you end up with a great DAC, but a lousy preamp, or a great preamp and a clunky streaming section, the device is significantly hobbled as a result. Fortunately, whether viewed as a series of sections, or as a complete whole, the SD 5.2 acquits itself extremely well.

What comes across quickly when listening to the SD 5.2 is a sense of consistency across all the inputs, whether digital or analogue. There's AVM's signature 'warm, yet fast' sound common to all. Whether this suggests a good analogue stage bringing diverse sources into line or just good, solid engineering smarts across the board is ultimately academic; it's the consistency that counts. It means no harsh, grating jumps as you move from internet radio to UPnP server, and it means no abrupt differences in quality between USB and S/PDIF.

This almost makes the choice of filter redundant, but for two things. First, the upsampling or filter choice seems to be a personal one on the part of the listener. Some will prefer 'CNV' or conversion (upsampling 44.1kHz files at 88.2kHz, 176.4kHz, or even 192kHz), others will prefer 'NAT' or 'native' sampling rate, with either a 'smooth' or 'sharp' filter, but the choice seems to come down to the tastes of the listener, rather than determined by the system itself. This choice also seems to vary according to source (up to a point; user preference appears uppermost), so you may find a sharp filter works for internet radio and upsampling for UPnP server sources. The choice is yours, driven by the multifunction buttons on the front panel. Fortunately, your choice on each digital input is remembered by the AVM.

AVM's sense of sophisticated, unflustered balance means the SD 5.2 is one of those devices that doesn't put anything to shame, but wins out thanks to its broad spread of performance. The highlighting of specific aspects of a product's presentation usually occurs because that product is emphasising the aspect you are highlighting. Sometimes, you could replace 'emphasising' with 'shouting'. And sometimes, the aspect highlighted is all it does best. 'Great imaging' can mean 'all it has is great imaging'.



► The AVM is harder to pin down, because it's uniformly good, and the SD 5.2 hangs on to the concept that the best products shouldn't have a sound. OK, so devices without character or flaw have never proved possible to date, and the AVM is no exception, but it both hides its limitations well and most are sins of omission. The sound lacks a little bit of ultimate transparency, especially on internet and streamed sources, and especially when playing classical music. For example, Neeme Jarvi's short-lived time with the Scottish National Orchestra in the late 1980s produced some fine work, including an excellent take on Prokofiev's Lieutenant Kijé suite [Chandos]. This is a recording that is highly polished and sparkles with energy and ambience. On the AVM it remains highly polished, but it's as if some of the 'sparkle' is a little distant. It's not 'veiled', though, and for someone who wants more of that heightened transparency should look toward AVM's solid-state SD 3.2 variant.

In truth, I'm more impressed by what the SD 5.2 does so well, because there is so much good going on inside this AVM device. It does have excellent imagery, presenting an extremely three-dimensional soundstage. It does have oodles of detail, but in a coherent manner. It does that rooted-in-place solidity that many 'next gen' digital devices struggle with so much. It does have a projected vocal articulation that gives you a somewhere between 'in the studio' and 'third row of the stalls' presentation. It does have effortless dynamics and great musical flow. And it does have a good foot-tapping nature. All of these things can be found in exaggerated form in other devices, but few give you the full package in one. I found this worked even with resoundingly difficult tracks, like 'Heaven,

TECHNICAL SPECIFICATIONS

Preamplifier Input sensitivity: 20 mV to 350 mV (adjustable)

Input impedance (line): 10 kOhm

Frequency response: <2Hz - >38kHz, 30 Hz - >20 kHz

TIM: 0,01% (mostly K2)

Sampling frequency: upsampling switchable up to 192 kHz/24 Bit

DAC frequency range: <20 Hz - 20 / 80 kHz (depending on input sampling frequency)

Deemphasis: yes, automatic

Input format Dig in opt/coax S/PDIF: 33 kHz - 96 / 192 kHz

DSD (via USB): 16-24 Bit 64DSD (2,8 MHz)

Asynchronous USB input: galvanically isolated 48 kHz/16 Bit (no driver needed), 192 kHz/24 Bit (no driver needed for Mac, but driver required for PC)

TIM (related to digital 0): 110 dB(A)

Streaming Formats Supported formats: MP3, WMA, AAC, OGG Vorbis, FLAC (192/32 via LAN), WAV (192/32 via LAN), AIFF (192/32 via LAN), ALAC (96/24 via LAN) UPnP 1.1, UPnP-AV and DLNA compatible server, Microsoft Windows Media Connect Server (WMDRM 10)

DLNA compatible server: NA

Radio Database: vTuner (automatic updates)

Dimensions (W x H x D): 430 x 130 x 370 mm

Weight: 10kg

Price: £5,100

Manufactured by: AVM

URL: www.avm-audio.com

Distributed in the UK by: C-Tech Audio

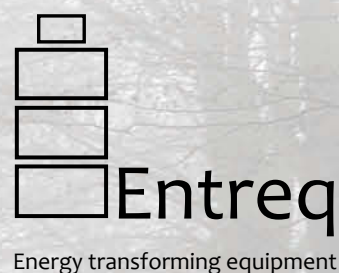
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How Long' from indietronica star East India Youth [*Total Strife Forever*, Stolen]. This can sound like someone worthy singing over a Tangerine Dream album (and later a Hawkwind track) if not well handled, and here it took on the sophistication and energy that's buried in the track.

The AVM Evolution SD 5.2 is the perfect example of audio done right for 2015. It's a fine replacement to about three or four separate devices in one simple box. It's a joy to use, sounds excellent, and takes charge of all of your audio system as one good sounding hub. Highly recommended, for today and tomorrow. +

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Aurender Flow portable headphone amp/DAC/preamp/player

by Chris Martens

Many hi-fi enthusiasts associate the name Aurender with the firm's range of audiophile-class servers, which have found favour among cognoscenti worldwide. However, at CES 2015, Aurender made its entry into an entirely new class of audio products through the announcement of the elegant-looking Flow portable headphone amplifier/DAC/preamp/player (\$1,295 US). While there certainly is no shortage of competition for the new Flow, we have come to feel that it is anything but a 'me-too' product, as you will learn in this review.

What are the Aurender's capabilities? Let's answer that question by reviewing the Flow's primary functions in turn. First, the Flow is a full-featured DAC with capabilities for decoding PCM files up to 32-bit/384kHz resolutions, plus DXD, DSD64, and DSD 128 files. Two inputs are provided: a USB port and an S/PDIF optical port. The DAC section is based on the popular and well-regarded ESS ESS9018K2M device. Unlike many portables, the Flow provides an extensive set of user selectable digital filtering options.

For PCM playback the filtering options are as follows:

- pcm0 (a 'fast roll-off PCM filter' that is the default setting),
- pcm1 (a 'minimum phase PCM filter' said to virtually eliminate ringing from signals), and
- pcm2 (a 'slow roll-off PCM filter' that is an in-band filter through which 'output signal will be slightly attenuated').

Differences between these PCM filter settings seemed comparatively small to me, though after many trials I concluded that the pcm0 setting offered the best combination of openness, detail, and transparency as balanced against tonal richness, smoothness of presentation, and musicality.

For DSD playback there are four available noise-shaping filters, each with different upper cut-off frequencies:

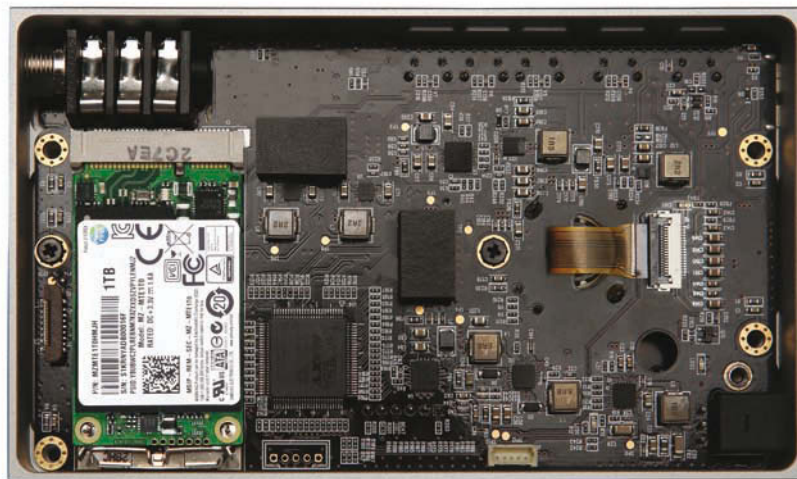
- dsd0 (cut-off frequency, 47.7kHz),
- dsd1 (cut-off frequency, 50kHz),
- dsd2 (cut-off frequency, 60kHz), and
- dsd3 (cut-off frequency, 70kHz).

Difference between the various DSD filter settings seemed more apparent than those between the PCM filters. For well-recorded musical material, I found the dsd3 filter offered maximum

openness, transparency, and detail, but also tended to expose any elements of upper midrange or treble harshness that were present. Where this was the case, switching to the dsd2 filter setting almost always put things right, meaning the dsd2 filter became my preferred default DSD setting. ▶



“Another example, one that reflects Aurender’s stature as a maker of audiophile-grade music servers, is the fact that the Flow, too, can act as a ‘server’ of sorts, with an internal bay where an optional mSATA drive can be installed.”



► For listeners planning to use the Flow as a DAC or preamplifier, Aurender offers a handy headphone-jack-to-stereo-analogue adapter cable fitted with RCA plugs. In turn, Aurender thoughtfully provides menu settings that allow fixed analogue outputs with output voltage of either 2V or 5V. For applications where the Flow will be tasked with preamplifier duties a third menu setting, labelled ‘VAR’, easily configures the Flow to have variable-level analogue outputs.

Aurender designers have anticipated and then addressed users’ real-world needs. Each time I thought of an open-ended question beginning with the phrase, “I wonder if the Flow...?”, the unit seemed to answer back, “Oh yes, I’ve got a menu setting just for that purpose.”

Consider, for example, the Flow’s menu of battery charging settings. Recognising that audiophiles have widely varying opinions as to how or when battery chargers should be used with portable devices, Aurender wisely gave the Flow three distinct charging settings:

- CHG+, which puts the unit in an “always charge” configuration,
- CHG–, which puts the unit in a “no charge” configuration whenever the Flow is switched on, and
- CHGA–, which charges the Flow’s battery automatically, but only when it is not playing music.

This level of attention to audiophile-relevant details is apparent throughout the Flow.

Another example, one that reflects Aurender’s stature as a maker of audiophile-grade music servers, is the fact that the Flow, too, can act as a ‘server’ of sorts, with an internal bay where an optional mSATA drive can be installed. Aurender says the, “latest Notebooks typically only have 128–256GB of SSD so there is not much space left for our music libraries.” Given this, Aurender provided the Flow’s mSATA slot (up to 1TB, optional), thus enabling the Flow to “act as an external USB storage (device).”

Interestingly, the mSATA drive can be set up via the user’s choice of Windows or Mac disk formatting conventions, effectively becoming an extension of the user’s chosen playback platform. Once users have installed an mSATA drive and loaded up music files, they have the unorthodox but decidedly cool option of playing digital files from the Flow back through the Flow’s USB DAC, while using their PCs or Macs to control the proceedings. In a very real sense, the Flow can serve as a storage device/‘source’ component and as a playback device—all at once.

The Flow provides extensive input settings, with a basic source menu offering three choices: Optical S/PDIF, USB 2.0/3.0, or the mSATA drive (if one has been installed). Then, a Host Mode sub-menu offers even more options:

- USB2 (for connecting to PCs with USB 2.0 ports),
- USB3 (for connecting to PCs with USB 3.0 ports),
- Mac,
- iOS, and
- anDR (which stands for Android).

Finally, the Flow offers a remarkably useful and—here’s that word again—thoughtful user interface: namely, a circular, multipurpose LCD status display positioned at the centre of the Flow’s large, ring-shaped volume control. (The volume control, incidentally, is velocity-sensitive and a tactile delight). The display isn’t particularly flashy, but it tells you virtually everything you’ll need to know about the Aurender’s operational status at a glance. Specifically, the display shows the present volume setting, the battery’s charge status, the ►



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The Absolute Sound, issue 246, Oct - '14



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“Part of the secret of the Flow’s sonic formula is its terrific bass, which is not only well defined, but also powerful.”

From the outset, the aptly named Flow offers sonic qualities of natural, organic warmth coupled with an admirable element of ‘fluidity’ in its presentation. When listening through the Flow, then, one might put on a couple of favourite tracks and then stop to reflect, “My, that was some seriously soul-satisfying music.” Now, in your mind’s eye, contrast this against the sort of listening experience that might prompt you instead to think, “My goodness, that was really terrific hi-fi sound!” If you can wrap your head around the ‘soul-satisfying music’ vs. ‘terrific hi-fi’ distinction (both of which are arguably very fine things to savour), then you’ll have grasped the central appeal of Aurender’s Flow.

Part of the secret to the Flow’s sonic formula is its terrific bass, which is not only well defined, but also powerful and beautifully weighted. In my view, one of the hardest things for hi-fi systems, whether speaker or headphone based, is to capture not only the textural and transient details of low-frequency instruments, but also their power, depth, and all-round gravitas. But this is one area where the Flow excels and it’s a quality that pays dividends across a broad spectrum of musical genres (even ones that don’t appear to have much bass content). To appreciate what I mean, let me point to an illustrative track.

Listen to the low percussion instruments heard on the CSO Brass section’s performance of Revueltas’ “Sensemaya” (Chicago Symphony Orchestra Brass – Live in Concert, CSO Resound, 24/96). The depth, weight, and slinky rhythmic drive of the low percussion instruments not only builds a foundation for the piece, but also creates a dark, mysterious, propulsive, jungle-like atmosphere that helps make the composition at once enticing and a little bit foreboding. If you took away the Flow’s bass depth and power, a good bit of the piece’s mysterious magic would go away, too.

Another element of the Flow’s fluidity involves the fact that it is clear yet very smooth through the upper midrange and treble regions (this in contrast to amp/DACs that are clear but prone to conveying razor-sharp sonic edges). To see how this plays out in musical terms, put on ‘A View From the Heart’ from the Stephen McQuarry Trio’s *Azure* [CD Baby, DSD128], paying close attention to the Flow’s handling of upper midrange and treble details. Through high-resolution headphones you’ll discover the Flow captures the lion’s share of the details from the upper register of the piano and from the percussionist’s cymbals with a good measure of clarity and definition, but it does so with a quality of effortless, easy-going grace.

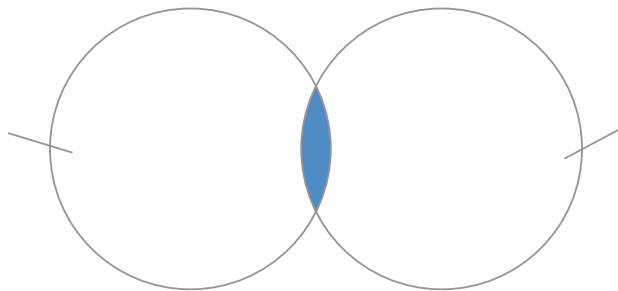
Does the smoothness and fluidity of the Flow come at a cost? In a sense it probably does. In side-by-side comparisons between the Flow and the Chord Hugo I found the Hugo enjoyed a moderate edge in terms of resolving very low-level sonic details and thus conveyed somewhat more musical information overall. The trade off, though, was that the Flow offered those wonderful, organic qualities of liquidity and grace that somehow feel very true to the experience of listening to live music. ▶

▶ type of file that is playing, and the bit width and sampling rate of the file. Further, the display can temporarily show available sub-menu options and facilitate final selections. In practice, the Flow’s display added a lot to my user experience, because it was intuitive to use and clear and explicit in conveying information.

To give the Flow a thorough test, I used it in conjunction with my Lenovo/Windows/JRiver-based music server, loaded with a mix standard CD-resolution and much higher resolution PCM, DXD, and DSD music files. The headphones used in my listening test included the extremely revealing (but very power-hungry) Abyss AB-1266, the HiFiMAN HE-560 (another power-hunger beast), the somewhat easier-to-drive HiFiMAN HE-400i, and the super-sensitive JH Audio Roxanne custom-fit in-ear monitors. Finally, I compared the Flow extensively with the famous but considerably more expensive Chord Hugo—a unit many regard as the de facto ‘Gold Standard’ among high-end portable headphone amp/DACs. Here’s what I learned.

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► To be analytical, I think one might argue that midrange frequencies through the Flow can sound ever so slightly recessed as compared to Chord's Hugo, which offers a somewhat more midrange-centric presentation. On *Azure*, then, the Flow presents the piano in a balanced trio context where it takes an equal (but not dominant) role vis-à-vis the accompanying bass and drum kit. Through the Chord Hugo, in contrast, the piano tends to stand out a bit more, conveying the impression (possibly a correct one?) that the piano is intended to be the sonic centrepiece of the trio. Solid arguments can, of course, be made for either presentation, but the differences I've noted are there to be heard if you listen closely.

Finally, in terms of dynamics, the Flow is fully competitive with the Hugo, as both have very similar power output specifications (the Flow's maximum output is 570mW at 32 Ohms as compared to the Hugo's 600mW at 32 Ohms). The volume control tapers of the two units are, however, significantly different, so that it sometimes feels as if the Flow must be 'turned up higher' than the Hugo to achieve comparable output levels when power-hungry headphones are used. Some unwary listeners assume this means the Flow is 'not very powerful', which isn't the case at all. Just be aware that, with demanding headphones, you may need to use the upper range of the Flow's volume controls to get the results you seek. One important side benefit of the Flow's volume control taper is that it has plenty of adjustment range at the lower end of the volume scale.

Aurender's Flow is arguably one the top two or three portable headphone amp/DACs on the market today. It combines solid build quality, elegant good looks, clever and versatile design, and through its natural, organic, and fluid sonic character that finds the desirable sweet spot between clarity/detail and smoothness. At \$1,295 the Flow also costs considerably less than some of its strongest competitors. Enthusiastically recommended. +



TECHNICAL SPECIFICATIONS

Type: High-resolution portable headphone amplifier/DAC/preamp/player.

Inputs: One TOSLink optical input (24/192-capable), one USB 3.0/2.0 input (32/384 and DSD128-capable).

Outputs: One 6.35mm headphone jack, configurable for fixed or variable level analogue outputs.

Device drivers:

- PC environment (Vista, Windows 7 and 8) will support up to 384kHz sample rates and DSD64/128 with installation of an Aurender-supplied device driver.
- Mac OS, iOS: no drivers are required.

Digital Filters: Three PCM filters and four DSD filters.

Battery: 4450mAh Samsung Li-ion battery provides approximately 7 hours of play time when driving a 300 ohm headphone load; charging time, 4–5 hours.

Power Output:

- 600 Ohms, 43mW
- 300 Ohms, 87mW
- 56 Ohms, 384mW
- 32 Ohms, 570mW

Dimensions (H x W x D): 28 x 87 x 137mm

Weight: 0.45kg

Price: \$1,295 (US)

Manufacturer: Aurender, SmartAudio Division, TVLogic Co., Ltd.

URL: www.aurender.com

URL for direct purchases: www.aurenderdirect.com/aurender-Aurender-FLOW/dp/B00OFM8KMO

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COMPETITION

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HiFi+ has teamed up with British loudspeaker expert Alacrity Audio to offer you the chance to win a pair of Caterthun 6 loudspeakers in the company's top-of-the-range Macassar Ebony finish.

Way back in issue 103, *Hi-Fi+* expert Jason Kennedy happened upon a pair of two-way standmount loudspeakers named after a Scottish hill fort but built in the south coast of England. The boundary design, he discovered, was the brainchild of Jonathan Carroll, and Carroll has some very interesting and unconventional ideas on loudspeaker design. The result is the Caterthun 6, a firm and fruity sounding loudspeaker, and the perfect antidote to boring boxes made to sound exactly the same.

We think the loudspeakers make an welcome addition to the audio line-up. Better yet, in their £2,699 Macassar Ebony finish (with accompanying flight case), they are easy to love. Especially, when you can win a pair for free! +



Competition Question

In which UK town or city does Alacrity Audio design and manufacture its range of loudspeakers?

- A. Birmingham
- B. Brighton
- C. Bermuda

To answer, please visit Alacrity Audio's dedicated competition page at <http://alacrityaudio.co.uk/competition-win-a-pair-of-cats-with-hifi-magazine/>. Or, send your

answer on a postcard (including your name, address, and contact details) to "Alacrity Audio (Competition), 8, Morley Lodge, Brighton, Sussex, BN2 3BF". The competition closes on June 4th, 2015.

Competition Rules

The competition will run from April 2nd, 2015 until June 4th, 2015. The competition is open to everyone, but multiple, automated or bulk entries will be disqualified. The winner will be chosen at random from all valid entries, will be contacted via email (where possible) and their name will be published on the Alacrity Audio website and in the magazine. The Editor's decision is final and no correspondence will be entered into. Absolute Multimedia (UK) Ltd. is compliant with the Data Protection Act and UK laws apply. Our policy is such that we will not pass on your details to any third party without your prior consent.

Linn Akurate Akudorik Exakt system

by Alan Sircom

Linn's Exakt concept is arguably the most 21st Century take on the audio system in production, and the Akurate Akudorik Exakt is the most attainable of the current Exakt systems. This makes it one of the most important high-resolution and 'next generation' audio systems available today, and any review of the system needs to reflect that.

As such, this is not one review, but three: a discussion of the mechanics of Exakt, how this system functions (both as an ambassador for the Exakt concept, and in a wider context as an audio system in its own right), and what Exakt implies as a broader audiophile concept.

Linn broke with the Exakt concept as part of its 40th year celebrations back in 2013. While all the public attention was focused on the Highland Park whisky hook-up and the anniversary turntable that ensued, the real story was Exakt, and its claim that "The Source is in the Speaker." Linn has long been an advocate of both active loudspeakers and networked audio systems, so creating an extension of both is a logical next step for the company.

Exakt works by eliminating sub-systems in the distribution and replay chain. The idea is that an uncompressed high-resolution recording is passed from studio to drive unit in the digital domain, avoiding any kind of deleterious effects from the traditional audio signal path along the way. In the case of this system, the four 100W Linn Chakra monolithic amp modules – driven by a Dynamik switch-mode power supply and built into the stand of the four-way, rear-ported Akudorik standmount loudspeaker – are the first point at which the signal is converted to analogue, and from there it's straight to the drive units. Crossover, level, DSP, and any other form of signal wrangling takes place in the digital domain in the Akurate Exakt DSM. The Akurate Exakt DSM also acts as a UPnP media player, and includes a range of analogue inputs (including a very good phono stage), which it doesn't dismiss as 'legacy'.

The Exakt system runs along Ethernet, albeit with the two loudspeakers running their RJ45 connectors through the Akurate Exakt DSM. At this point, there's not a great difference between the Linn system and that of, say, Meridian's DSP speakers. Where the Linn system gets really clever is those amplifier-stands are set-up by using Linn's Set-Up Wizard and Konfig programs. You enter the serial number of the stand, the serial number of the loudspeaker, and whether you are using it as a right or left channel. The Konfig program sends this data back to Linn, and a few minutes later, the DSP-based crossover is configured for the parameters in the four drive units in each loudspeaker. Not general parameters... the specific demands of the drive units in that particular loudspeaker. Careful matching of drive units can get a loudspeaker accurate to within about $\pm 1\text{dB}$ of a 'Golden Reference' loudspeaker in the factory; Exakt essentially makes each loudspeaker its own 'Golden Reference' by this method. It also means that if a drive unit is damaged, a new Konfig file can be drawn up to reflect and compensate for the replacement unit. This is not an excuse to



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AC/HFP/80



- ▶ use cheaper drive units, but it's the way to make the loudspeakers as accurate (pun intended) as possible.

Linn also allows a significant amount of room acoustics processing in the system. Rather than measuring the room's acoustic properties directly with a microphone (à la Trinnov), Exakt works by entering the length, width, and height of the room into Konfig, then adding the position of the listener relative to the speakers, and the speaker position, and letting the system add some tailoring to suit the room itself. As this issue went to press, Linn announced a slew of new developments to the Linn DS system, including a new 'SPACE Optimisation +' (Speaker Placement And Custom Environment) system, that allows the installer to include yet more parameters regarding the physical properties of the room. This includes construction of the walls, door positions, amount of glass in a room, but arrived too late for inclusion in this review.

Although ideally loudspeakers should be set in the optimum position out in the room (in Linn's case, as determined by 'tune dem' listening tests), that may frequently clash with interior design criteria, and Linn's Konfig (now SPACE Optimisation+ within Konfig) allows moving the loudspeakers to more domestically-chummy positions without significant sonic sacrifice. This sounds trivial, but is increasingly crucial; not all of us have the ability to have loudspeakers placed in their optimum positions, but compromise frequently means dreadful sound. The Exakt system allows some wiggle room, in the living room. You can also tailor the extent of the Exakt DSP room mode optimisation, using a frequency plot on Konfig, but be warned; always remember to store your original room mode optimisation file before you tinker, and it's best to wait until you begin to acclimatise yourself to your new DSP sound for a while. In truth, Linn suggests only a handful of Exakt users have ever experimented with the room mode settings, finding the basic Konfig setting good enough.

The way the system works needs some explanation, in a wider sense. As discussed, it runs on Ethernet, with the two Akudorik stands connected to the Akurate Exakt DSM controller. The Akurate connects with a single Ethernet cable to an Internet Router or network switch. If you have stored music on either a computer or a network attached storage device, this also needs to connect to the same network. Your computer or tablet needs to run Linn's own Kazoo music control point software (or similar), with either Kazoo

“Not all of us have the ability to have loudspeakers placed in their optimum positions, but compromise frequently means dreadful sound.”

Server, MinimServer, or Twonky running on a computer or NAS device (this may limit the choice of NAS drive to a QNAP model, although things are improving here), and, in an ideal world, get a Tidal account to stream high-quality music through the internet. The Linn system currently supports most music formats up to 24-bit, 192kHz precision, but no DSD or DXD support. If all that sounds like gobbledegook, Linn's dealer-centred approach means all this 'back office' stuff is taken care of by an expert; you just end up with a black or silver box, a pair of loudspeakers, and an iPad that controls and navigates everything.

Linn has a very unpretentious open-source approach to the software used with the system, and although there are certain aspects currently only provided by Linn itself (most notably the set-up and configuration packages), use of alternatives is rife through Linn's own active forum. The company ▶



“An uncanny sound, surprisingly deep for a standmount system, and like music is being directly injected into your auditory cortex.”

of things to change and fiddle with a source of frustration, but those who just want damn good sound without all the existential angst will just love what Linn has on offer here.

The system as a complete package also sounds good, too, but not in the conventional audiophile sense. Linn systems have long gone for a sense of directness and precision to the sound that reminds you why Linn was considered one of the Rhythm Kings back in the Flat Earth heyday of the 1980s. It's an up-beat, clean, and focused sound, and with the Exakt system in place, that sense of focus is even more, er, exacting. This is not like DSP of old; no more, “the operation was a complete success, but the patient died” presentations. Exakt is a potent blend of mathematical room correction and precise driver alignment that makes it sound like speaker and room are performing at their respective bests. It takes a very critical ear to hear that DSP at work, and it's hard to describe (the closest I can get is a subtle blurring of orchestral intent). Otherwise, it's an uncanny sound, surprisingly deep for a standmount system, and like music is being directly injected into your auditory cortex and by-passing system, room, and even ear. Music is exceptionally lithe and articulate, here. This makes the system preternaturally good with vocals – Domingo's tenor had an presence and authority that was almost unnerving on *Opern Gala* [DG] – but also surprisingly adept across the board. Its dynamic range doesn't have the explosiveness found in some systems, but when listening to the Linn Exakt, you start to wonder whether that edge-of-the-seat dynamic range is all show. The Linn system is not tremulous in the face of dynamic range, be it Solti's visceral interpretation of Mahler's Eighth Symphony [Decca] or AC/DC playing live to a thousand hormonal teenage boys [*If You Want Blood...* Atlantic]. It's just not showy or flashy in its dynamic range.

In a way, what Exakt does is give you the performance of really good headphones, in free space. This is a more important thing than many well-dipped enthusiasts might parse. Headphonistas are now starting to come out from under their cans and listen to music played in the listening and living

▶ also has some of the best documentation on networked audio in the business in its LinnDocs webpages.

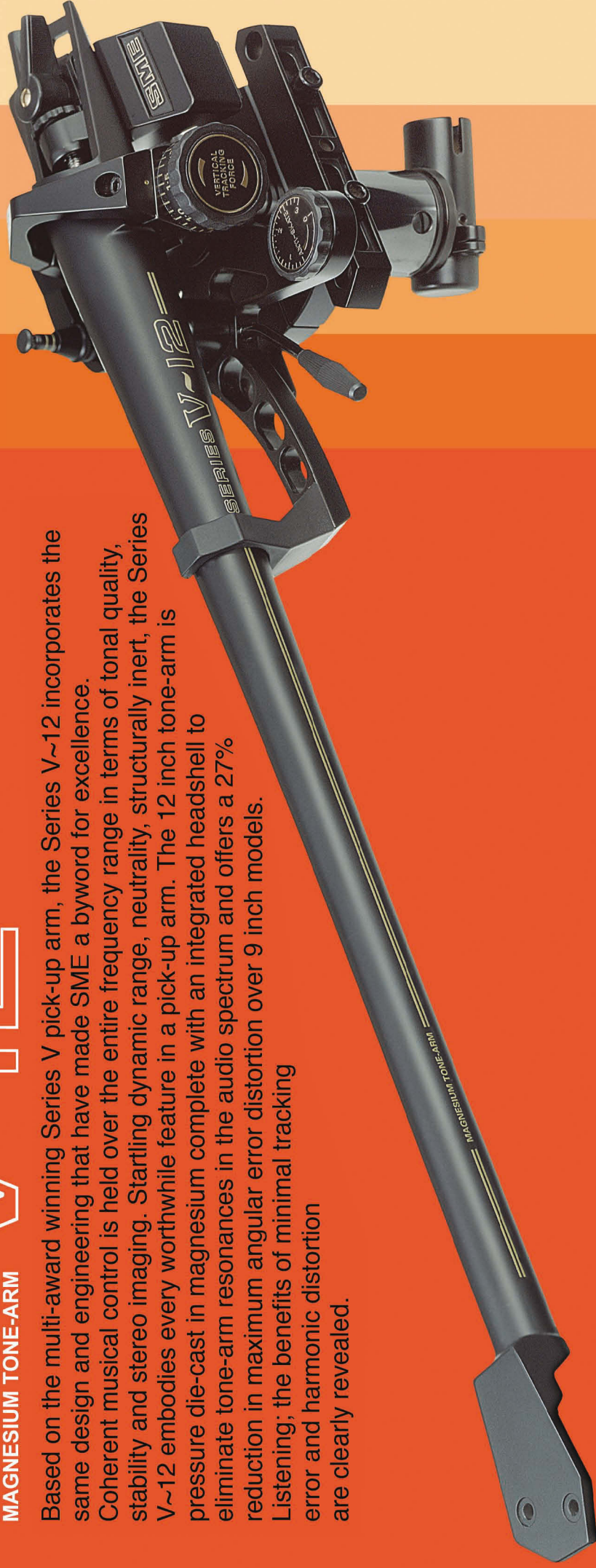
Aside from wearing down the 'k' key on my keyboard from Linn's quirky nomenclature, the system itself has a heck of a lot going for it. It's a complete joy to use. If you can operate an iPad (and given there is an iPad app for cats to take selfies, that's a pretty low bar to admission), you can learn to operate the configured system in about 30 seconds flat, it's beautifully made in a kind of very obviously high-tech cool kind of way, and has the sort of sophistication of interface that the likes of Apple and Bang & Olufsen do so well. I can perhaps have some sympathy with solder-sniffing box swappers, who might find the lack



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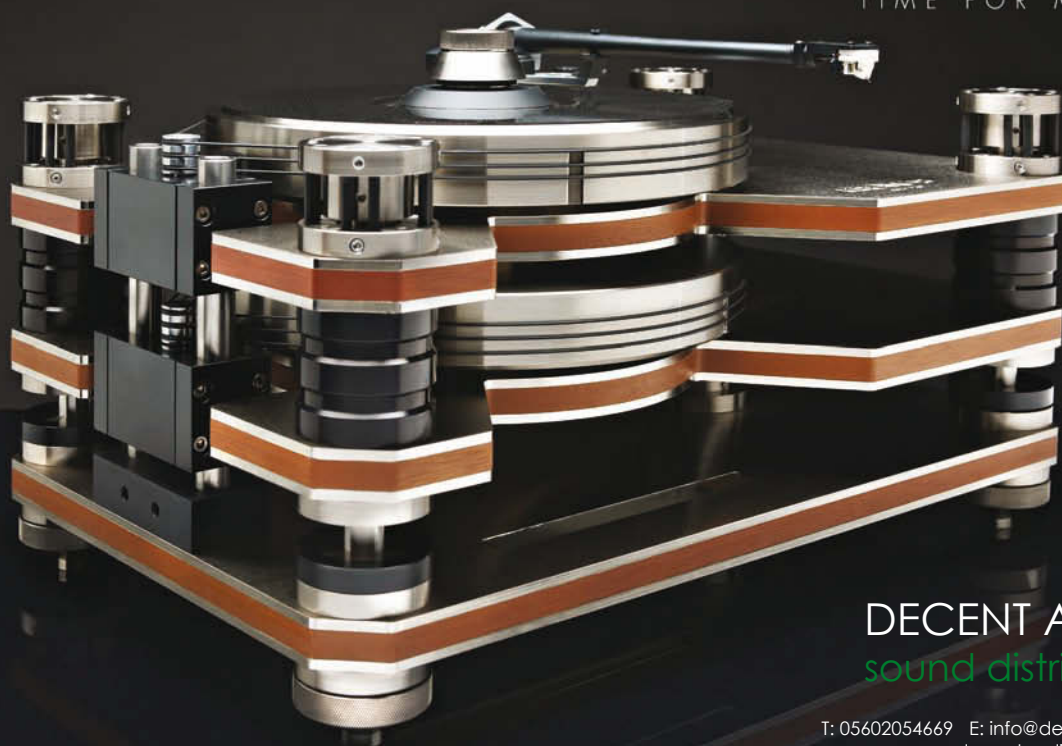
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► room... and sometimes don't like what they hear. They are not used to the kind of bass overhang we have learned to live with in conventional audio systems. This became all the more obvious when experimenting with Exakt's room correction by turning it off. Suddenly, that taut, dry bass took on a 'flubby' character – more like conventional systems, in fact.

I think this directness of sound might run counter to the perceived demands of enthusiasts who have spent the last few years searching for the ultimate soundstage machine. Note the word 'perceived' here; I feel Linn's more direct connection with the music would appeal to many enthusiasts, were they willing to put their preconceptions on hold for an hour or two. In fact, the Akudoriks are not bad at producing a soundstage, but they do so with that distinct Linn 'dryness'. This works best with slightly forward-sounding mixes; close mic'd, upfront music like 'Royals' by Lorde [*Pure Heroine*, Universal], and is less successful with big soundstage audiophile works like Rutter's Requiem [Reference Recordings]. This is not a scaling thing, because the system scales well, keeping small recordings small and big recordings big, but it's simply a dry acoustic.

In a way, one of the big questions is how do you deconstruct a system like this to the point where you can point to an individual component in the system. In truth, it's difficult. Hearing the Kudos loudspeakers in their Exakt set-up at Bristol helped, as it can remove the Linn speaker from the system, and from there a lot of aspects of the character of this system (especially that dryness) can be directed toward the Akudorik loudspeakers, but truthfully, I think the performance of the system should be considered as a system in its entirety.

Computer pundits frequently discuss the 'Internet of Things' or 'IoT', where every device with a plug is Internet enabled. This doesn't mean you can surf the net from your electric shaver, but it means your shaver can send a message back to the manufacturer if there is a fault, or new blades are required, and so on. The Akurate Akudorik Exakt system truly creates an 'IoT' infrastructure for your audio replay chain. Today, few people buy a new car without sophisticated on-board diagnostics and fault-finding systems, and Linn applies the same logic to the audio system, to a level not seen (or heard) from other manufacturers. This may seem like gilding the lily today, but I think this will be an expectation from all good audio systems before too long. It's the way things are going, why should audio be any different?

This is perhaps the most important aspect of the Linn Exakt system, even over and above how it performs. It's a glimpse of a possible (probable, even) future for audio in the home, one that would have seemed like sci-fi a decade ago. The Akurate Akudorik Exakt system, then, is a trailblazer; and a damn fine sounding one at that. +

TECHNICAL SPECIFICATIONS

Linn Akurate Exakt DSM

Type: Multi-source digital stream player

Supported file types: FLAC, ALAC, WAV, MP3, WMA, AIFF, AAC, OGG

Audio Sample rates: 7.35k-192k

Word Depths: 16-24 bits

Analogue Inputs: 1× Balanced XLR (pair) 1× RCA Input pair (Line Level) 1× RCA Input pair (Line Level/MM/MC Configurable)

Digital inputs: 4× HDMI, 3× S/PDIF (RCA), 3× Toslink, 1× RJ45 Digital outputs: 1× HDMI (Type A), 1× S/PDIF (RCA), 1× Toslink, 4× RJ45 (Exakt Link)

Control Protocol: Compatible with UPnP™ media servers, UPnP™ AV 1.0 control points

Finishes: Silver, Black

Dimensions (HxWxD): 91×380×380mm

Weight: 5.8kg

Linn Exakt Akudorik

Type: 4-way bass reflex standmounted Aktiv loudspeaker with Exakt technology

Drive Units: 13mm silk-dome supertweeter, 25mm PU dome tweeter, 75mm PU dome midrange, 165mm doped paper cone bass

Frequency range: 40Hz-33kHz

Connections: IEC power, 2× Exakt Link RJ45 (in/out)

Finishes: Black Ash, Rosenuit, Walnut, Cherry, Oak, and White as standard. Piano Black, Rosenuit, Walnut, Cherry, Oak, White and over 200 RAL Classic colours in high gloss

Dimensions (HxWxD): 958×304×388 mm

Weight: 23kg per speaker

Price: £17,500 (for complete system)

Manufactured by: Linn Products

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Moon Nêo 430HAD desktop headphone amplifier/DAC

by Chris Martens

At a trade show roughly ten and a half months ago, Moon's representatives took me aside and asked if I would like a sneak preview of an upcoming, very high performance, headphone-centric product from their firm.

As a self-proclaimed 'headphonista' and long-term student of all things headphone-related, I naturally jumped at the chance. What the Moon team showed me, in the form of then-embargoed specifications documents and a handful of design drawings, turned out to be a prospectus for their highly ambitious Nêo 430HAD desktop headphone amp/DAC (£3,300), which began to ship around November of last year.

Actually, to be more precise, I should say that Moon showed me a preview of two very closely-related products: the amplifier-only Nêo 430HA (£2,700, where 'HA' presumably stands for 'Headphone Amplifier'), and the Nêo 430HAD (where 'HAD' apparently means 'Headphone Amplifier/DAC'). In essence, the Nêo 430HAD is a 430HA that is fitted out at the factory with Moon's extremely versatile DAC3 Engine module. Interestingly, 430HA owners who decide they would like to add the DAC3 Engine module after the fact can do so for an upgrade/installation charge of £800.

As many of you know, a quiet revolution in the world of high-end audio has been taking shape over the past several

years—one centred upon high-performance headphone-based audio systems. In far too many cases, traditional high-end manufacturers and enthusiasts alike have reacted to this emerging market trend with everything from benign indifference on through to outright hostility or disdain (sad to say, we audiophiles sometimes can be a hidebound lot who find change difficult to embrace). This is a shame, because—whether audiophiles personally choose to use headphones or not—today's finest headphone-based systems undeniably serve up levels of performance deserving of their respect.

Happily, the good people at Moon well and truly 'get' this fact, and to their everlasting credit they immediately grasped that it would take great care, a ton of critical headphone listening, and some very, very serious design skills in order to craft a world-class headphone amplifier. It also helps that Moon has made a point of keeping a finger on the pulse of veteran headphone users to better understand their needs and wants. Accordingly, Moon approached the design of the Nêo 430HA/430HAD with the expectation that it would need to leverage everything it has learned through decades of building top-tier preamps, power amps, digital-to-analogue converters, and even low-noise phonostages (because headphone amps, like phonostages, must handle low-level signals with clarity, precision, and utter freedom from noise). As a result, I'm pleased to say, Moon's Nêo 430HA has emerged ►



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“The Nēo 430HA is a fully-balanced, wide-bandwidth, low-noise, and extremely powerful (8Wpc @ 32 Ohms) headphone amplifier.”

► as a truly great headphone amplifier—one that establishes performance benchmarks that only a tiny handful of competitors can hope to meet or exceed.

The Nēo 430HA is a fully-balanced, wide-bandwidth, low-noise, and extremely powerful (8Wpc @ 32 Ohms) headphone amplifier that provides four stereo analogue inputs (three single-ended, one balanced), two rear-panel stereo analogue outputs (both single-ended, one with fixed and the other with variable outputs), plus three front-panel headphone outputs (one single-ended and two balanced, one via a 4-pin XLR connector and the other via dual 3-pin XLR connectors). The amp provides a bevy of front-panel control buttons: buttons for Standby, Gain (to select either 14 or 20 dB of gain), Display (to turn the display, which shows the input selected and the volume setting, on or off), Crossfeed (to engage a so-called ‘crossfeed’ circuit designed to give more realistic, three-dimensional soundstages through headphones), up/down Input controls, Mute, and MP (to engage the front-panel ‘Media Player’ input), plus a large rotary Volume control encoder. Moon SimLink ports on the rear panel enable the 430HA to control (or be controlled by) other SimLink-equipped components. The industrial design is straight out of Moon’s Nēo-series playbook, which is to say simple, elegant, well-made, and attractively finished—but not ostentatious. Completing the picture is Moon’s multipurpose CRM2 remote, which can also be used to control other Moon components.

Moon says the Nēo 430HA features high-quality circuit components throughout, a sophisticated fully-balanced audio circuit for reduced noise and superior rendition of low-level details, and a low-operating-temperature design for greater long-term longevity. Moreover, the amp uses what Moon terms an “oversized power supply” based on two toroidal transformers and featuring eight stages of DC voltage regulation. Further, the amp uses four stages of the proprietary M-LoVo (Moon Low Voltage) DC regulation circuit—a circuit said to be “virtually free of noise” and to



yield “an exceptionally fast, precise, and stable DC voltage.” Interestingly, the same M-LoVo circuit is also used in Moon’s top-of-the-line Evolution-series 810LP phono preamplifier and 740P preamplifier, and is said to make for “a power supply with a virtually unmeasurable noise floor.” Then, expanding upon the themes of low-noise and precision, the Nēo 430HAD uses the firm’s 530-step, M-eVOL2 volume control, which is said to prevent “sonic degradation of the signal, regardless of the selected volume setting,” with channel-matching accurate to within 0.1 dB. In short, Moon sweated countless details large and small in crafting this design.

The optional DAC3 Engine, which once installed turns the Nēo 430HA into a Nēo 430HAD, adds a dramatic range of digital audio options to the headphone amp. Specifically, the DAC3 module provides four digital inputs (one optical TOSLINK, two coaxial S/PDIF, and one USB Type B port), and supports decoding for PCM files at bit depths and rates up to 32/384, and decoding for DSD64, DSD128, and DSD256 (though some of the highest resolution file-types are only supported via the USB interface, which is typical for most high-performance DACs these days). The DAC section’s intrinsic jitter carries an admirably low rating: < 25 picoseconds RMS.

One important note in passing is that Moon indicates the Nēo 430HAD requires fully 300 hours of run-in before it ►

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► sounds its best, and I must tell you they are right. Straight out of the box, the 430HAD sounds overly tightly wound, somewhat edgy, and more than a little bit stiff and ‘dry – sounding’. But, given the time it deserves, the amp/DAC’s sound gradually becomes much smoother, more expansive, and free-flowing, becoming more natural-sounding as the hours roll by.

To put the versatile NĒo 430HAD through its paces I compared it to my reference AURALiC VEGA Digital Audio Processor, TAURUS PRE preamplifier, and TAURUS MkII fully balanced headphone amplifier. In the course of my listening tests I tried the Moon at the front end of my traditional, speaker-based reference system, and with a wide range of headphones, including the superb Abyss AB-1266, the Audeze LCD-3, the HiFiMAN HE-560, and the Oppo HA-1 (with revision 2 ear pads). In all cases, the system was fed a mix of standard and high-res PCM, DXD, and DSD music files from my Lenovo/Windows/JRiver-based music server.

Viewed purely as an analogue headphone amplifier/preamplifier, the NĒo 430HAD is by any objective standard superb. In fact, I would say it is easily one of the two or three best-sound headphone amplifier’s I have yet heard at any price. What I particularly liked about the Moon was the fact that it was highly detailed (yet not oppressively ‘detail-obsessed’) in its presentation, was exceptionally quiet (meaning it worked equally well the high and low-sensitivity headphones), was highly controlled (yet not unduly ‘uptight’), was reasonably natural-sounding (yet never as a result of artificial warmth or a softly-focussed demeanour), and offered what can only be called bottomless-pit-like reserves of super-abundant power (this amp fears no headphone load of which I am aware).

Put all these characteristics together and you really do have an amp that gives top-tier performance through any headphone you wish, playing any kind of musical material

you choose, at any volume level you prefer, with no ifs, ands, or buts about it. Honestly, the only hard part is finding source components good enough to keep up with the Moon, as it will instantly and effortlessly reveal even small differences between sources.

To grasp the benefits on offer, try playing rollicking good-times pop/rock/funk music (e.g., ‘Musicology’ from Prince’s album of the same name [Sony]) through an intensely power-hungry headphone like the Abyss AB-1266, and note how crisp the ultra-precise guitar and percussion transient sounds, or how cleverly inflected Prince’s voice can be at times, or how taut and thunderously powerful bass notes of all kinds can be. This amp never, ever runs out of clarity or power so that after you listen through it for a while you may start to feel as if it makes other amps sound, by comparison, somewhat compressed-sounding or lacking in definition.

Or, try a track that is rich in subtle textural, transient, and reverberant details, such as ‘Stank’ from Jamey Haddad, Mark Sherman, and Lenny White’s *Explorations in Space and Time* [Chesky], and note the effortless way in which the Moon envelopes you in layer upon layer of luxurious music details. On this particular track, the Moon’s resolution and low-noise not only help each of the instruments in play to sound more realistic and complete, but also helps to reveal the acoustic context of the recording, allowing you to hear the interactions between the instruments’ voices and acoustics of the recording space in a vividly three-dimensional way. Quite honestly, there is little to quibble about in the Moon’s sonic performance, apart from the fact that the run-in period can seem to take forever and a day.

I have only two small nits to pick regarding the Moon’s features/functions set. First, I do wish Moon had provided two Mute switches—one to silence the headphone outputs and the other to separately silence the rear-panel analogue outputs. I say this because there are moments where one ►

“If you have yearned for a realistically priced, world-class headphone amplifier that can stand tall in comparison with absolutely any other amp being produced today, you need to look no further.”

- might want to use one set of outputs, but not the other (where as things now stand, both outputs are switched on or off together). Second, I would love to see Moon provide a set of variable-level balanced outputs for the 430HAD, as I think this would make it an even better preamp/DAC.

Assessed purely as a DAC, the Nēo 430HAD's DAC3 Engine is a very good and very versatile component, but one that is not quite the state-of-the-art performer that the 430HA amplifier is. This is not to take anything away from the DAC3 Engine option, though, as I think it arguably adds a huge amount of high-level digital functionality for not an awful lot of money. In side-by-side comparisons with the AURALiC VEGA Digital Audio Processor, I found I narrowly preferred the VEGA to the Moon DAC3 Engine, although the performance gap was narrow enough that I could happily have lived with either one on a long-term basis. In essence, the sonic differences amounted to the fact that the AURALiC offered a slightly more expansive, three-dimensional sound and an even more vibrant and natural sounding character overall. On the other hand, the DAC3 Engine option costs less than half what the AURALiC DAC does and is arguably much less fussy about device driver setup for those (like me) using Windows-based music servers.

If you have yearned for a realistically-priced, world-class headphone amplifier that can stand tall in comparison with absolutely any other amp being produced today, you need look no further than Moon's Nēo 430HA. If you already own a very high-quality, high-res PCM/DXD/DSD-capable DAC, then the 430HA is all you will need to start exploring the uppermost reaches of high-end headphone performance. If you don't already own a premium-quality, multi-format DAC, then going with the Nēo430HAD (and its embedded Moon DAC3 engine) makes an awful lot of sense. The DAC3 module offers very good performance, is ridiculously convenient to use, and will let you explore not only the high-res digital audio formats commonly available today, but also anticipates possible future format developments. Either way, Moon has a surefire winner on its hands. +

TECHNICAL SPECIFICATIONS

Type: High-resolution, fully balanced, solid-state, desktop headphone amplifier/DAC.

Inputs: One TOSLink optical digital input (24/192-capable), two coaxial S/PDIF digital inputs (23/192 capable), one USB input (32/384 and DSD256-capable), two single-ended stereo analogue inputs (via RCA jacks), and one balanced stereo analogue input (via XLR jacks).

Outputs: One single-ended headphone output (via a 6.35mm headphone jack), two balanced headphone outputs (one via dual 3-pin XLR jacks, one via a 4-pin XLR jack), and two stereo analogue outputs (one fixed level and one variable level, both via RCA jacks).

Device drivers: PC environment (Vista, Windows 7 and 8) will support up to 384kHz sample rates and DSD64/128/256 with installation of a Moon-supplied device driver. Mac OS, iOS: no drivers are required.

Frequency Response:

Amplifier: 20Hz – 20kHz ± 0.1dB, 5Hz – 100kHz +0/–3.0dB

DAC: 20Hz – 20kHz ± 0.2dB, 5Hz – 72kHz +0/–3.0dB

Signal-to-Noise Ratio:

Amplifier: 120dB @ full output, 20Hz – 20kHz

DAC: >116dB @ full output

Distortion:

Amplifier: THD, 20Hz – 20kHz, 0.005%. IMD, 0.005%

DAC: THD @ 1kHz, 0dBFS (A-weighted), <0.001%. IMD, <0.004%

Power Output: 600 Ohms, 667mW,

300 Ohms, 1.33 Watts,

50 Ohms, 8 Watts,

32 Ohms, 570mW

Dimensions (H x W x D): 28 x 87 x 137mm

Weight: 10kg

Price: £2,700 for 430HA, or £3,300 for 430HAD version.

Note that the DAC3 Engine can be retrofitted to an existing 430HA for £800.

Manufacturer: Simaudio Ltd.,

URL: www.simaudio.com

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Naim Audio SuperUniti

by Nicholas Ripley

It's almost impossible for a British audio enthusiast to escape some exposure to Naim Audio, but I have come off relatively unscathed. Until now: a white box containing a Naim SuperUniti turned up *chez* Ripley. It wasn't to be a review, though. More an investigation on my part. However, I have been re-considering putting my toe in the streaming waters, and this is as good a place as any to start, as it's currently one of a handful of audio components over about £2,000 that actually sells in good numbers in the UK. It's this and the Devialet, apparently, that dominate the UK sales charts.

I'll skip a lengthy description of the functionality of the product. That is extremely well documented (the SuperUniti has been around since 2011) and much of its raw technical description can be had from the Technical Specifications in the closing credits. Instead, it's more a description of the journey; of how someone who was until very recently wedded to CD gets pushed – mostly willingly, I should add – into the 21st Century.

I'm not a 'computer in the living room' guy. I'm a 'music in the living room' guy. Even the goggle-box is in another room, hanging on a wall opposite the dining table in the 'family room', and in fairness we spend a great of time gathered round this place, enjoying food and wine and company. But perhaps

we have a different relationship to most when it comes to TV; it's a source of news, information, and entertainment, but not our primary source of entertainment. Our living room is a space where reading and listening happens. My partner, it must be said, would prefer more space given over for books, and less space for CDs and audio equipment, so the motivation behind investigating next-generation disc-less audio systems has in no small part come out of that demand.

I tried the 'Mac 'n' DAC' route a few years ago, but found placing a laptop in 'the inner sanctum' something of an imposition. Strangely though, the Apple iPad was nowhere near as imposing in the same setting, and we soon found ourselves bonded to these tablets throughout the house. And ▶





► so, the combination of a streamed music system, controlled from the iPad, made a lot of sense. Like many, I tried Sonos, which stresses the convenience and ease of installation. But, it never quite sounded as good as my CD player to me, and ultimately it didn't make the grade. I guess I should have tried the Squeezebox while it was still a going concern, but frankly the Sonos sound quality made me discount streaming for too long.

In fairness, I enjoy the performance and convenience of Mac&DAC systems from a sonic perspective, but what I want is the Holy Trinity of digital audio: something with the performance of CD, the convenience of 'Mac 'n' DAC', and the in-room discretion of Sonos.

All of which brings me to Naim's SuperUniti.

I felt that if I were to do this, I should go with an 'all-in' approach initially. I know a streaming device can be 'just another box in the system', but if this were to be the end of my time with CD (and from a perspective of marital harmony, putting almost a room full of discs in the attic would be useful), there is no sense being all half-hearted about the change. And the SuperUniti represented the most 'all-in' I could take without filling the hallway with boxes. So, I borrowed the Editor's UnitiServe (I'm not big on the whole networking thing yet, and the UnitiServe seems the most bullet-proof option around), plugged it and the SuperUniti into my Internet router (I had a short run of CAT5 between the UnitiServe and the router, and ran a far longer length of CAT5 from router to the SuperUniti in the next room), and started loading up discs. The Naim apps make this a surprisingly simple process.

I had been warned about the Naim running in process, and it proved no exaggeration. One day good, next day bad, then OK, then dreadful, and so on until the SuperUniti settled down.

Frankly, my initial time with the SuperUniti all but confirmed why I hadn't gone down the Naim path years ago. Naim moves in a different musical direction to me: my triggers are stereo separation and detail (or so I thought), and Naim does tempo and leading edges. So I listened, boxed the SuperUniti up, and put my old system back together. And that was the point I began to realise why Naim has a loyal following.

My existing system, I concluded, sucks... and it sucks for all the reasons I supposedly like (liked?) hi-fi. It focused on the trivia, not the nub of the music, something the SuperUniti just pointed you towards. It didn't change my musical core, but it pulled me out of a musical rut, of only listening to the sound music makes, rather than the music itself. Given my affinity towards 'gnarly' 20th Century music, I would have expected the Naim's sonic strengths to have

"My existing system, I concluded, sucks... and it sucks for all the reasons I supposedly like (liked?) hi-fi. It focused on the trivia, not the nub of the music, something the SuperUniti just pointed you towards."

little effect – a device that's all about tempo is going to struggle to find much to latch on to in Panufnik or Varese, but in fact the SuperUniti's sharp focus of musical energy – I can only describe it as 'snap' – really works to put difficult pieces from complicated composers into much-needed order. It's odd, because the Naim sound is not a recreation of the live event as defined by the dictums of 'The Absolute Sound', but it has more of the intensity and fascination of the musical event, and it's hard to go back to something less driven as a result.

I fully recognise that this has none of the conventions of audio performance descriptions, but where they normally describe a product, they almost miss the point of the SuperUniti. If I analyse the sound in such terms, it comes across as dynamic, with a fundamentally neutral tonal balance and frequency response, with a pleasant, slightly light bounce to the bottom end, ►





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► and a little bit of grain to the upper midrange and treble. Not enough to get upset about, but a little bit of extra character to the sound. Stereo imagery, though good, is not exceptional, especially in terms of image height, but it has excellent solidity. In such terms, the SuperUniti's strongest suit is its vocal articulation, projecting a completely understandable voice into the room with scale and grace. But this tells you everything about the sound, and nothing about how music sounds. The SuperUniti instead pushes these audiophile elements back in the mix, presenting the music uppermost.

The net result of all of this was I quickly took the SuperUniti back out of the box... and it was with a room full of 'toys' that my partner went into full 'intervention' mode.

I kind of knew it was coming. All it took was three discs, moved out of the living room and onto the UnitiServe under that watchful, hawk-like gaze. "You mean," came the words, in that slow, mannered tone that means decisions have been made for you in your absence, "all your discs can live in here [pointing to the UnitiServe]?" The voice became even calmer, like a mountain stream; pure, clear, and capable of almost instant hypothermia: "So this [pointing to the SuperUniti]" my partner began, "can replace all *that* [pointing to my system]?" And then the clincher, "And you think this [pointing to the SuperUniti again] sounds better than all that [waving hand pointedly in the general direction of my system], too?" I knew what was coming by the hand waving. My cards were marked, my fate sealed. I tried to argue (somewhat weakly, I admit) that lots of boxes were important for writing reviews, but it was too late. The foot was down, and from this angle it looked distinctly like a cloven hoof.

The result of this is simple. I'm soon to be the proud owner of a Naim SuperUniti, and probably a UnitiServe, too. In fairness, irrespective of the other half's intervention, I'm happy to make the change. It has some kind of core effect on me as a listener that makes me think I've been listening 'wrong' all these years. With the SuperUniti, I'm back on the right heading, and I'm interested to see where that heading takes me: both musically, and in terms of audio equipment. I just wish I'd suggested I look at a complete system. That way, I might have kept more boxes in my room! +

TECHNICAL SPECIFICATIONS

Type: Single-box streaming device

Analog Inputs: 1 × 5-pin DIN, 2 × RCA pair, 1 × 3.5 mm front panel jack

Digital Inputs: 6 × S/PDIF (1 × coaxial BNC, 1 × coaxial RCA, 3 × optical, Toslink, 1 × 3.5mm front panel mini-Toslink)

Sample Rates Maximum: 192kHz (coaxial) 96kHz (optical)

UPnP input: Ethernet (RJ45), Wi-Fi

USB/iPod input: Front panel USB (type A)

iRadio input: Ethernet (RJ45), Wi-Fi

Audio Formats Supported: WAV and AIFF (up to 32-bit/192 kHz) FLAC (up to 24bit/192 kHz) ALAC (up to 24-bit/96kHz) WMA (up to 16-bit/48kHz), Ogg Vorbis (up to 16-bit/48kHz) MP3 and M4a (up to 320kbps) WMA, MP3, MMS

Output Power: 80 watts per channel into 8 ohms

Analogue Outputs: Preamp out (4-pin DIN), Subwoofer out (RCA pair)

Digital Outputs: S/PDIF (coaxial BNC 75 ohms)

Dimensions (HxWxD): 87 × 432 × 314mm

Weight: 12.8kg

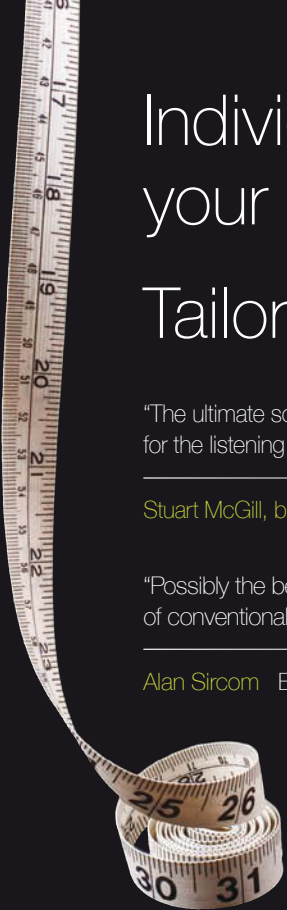
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Paul Miller, Hi-Fi News, March 2015

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Cardas Clear Reflection cables

by Alan Sircom

Cardas Audio can draw upon a number of major 'hits' in its time, but arguably none quite as successful as its Golden Cross and Golden Reference lines. These have been, for many people, *the* high-end cable lines. Even with the launch of Clear, and Clear Beyond (both of which out-perform Golden Cross and Golden Reference), these long-standing cables stood at the apex of price vs. performance for many. But, enough was enough, and Cardas has finally replaced them with the new Clear Reflection line.

'Replaced' is possibly too strong a term. It's more like gene-splicing. Cardas took what is patently good from Clear, and did the same to the Golden Cross and Reference, to come up with Clear Reflection. The name implies this, according to Cardas: Clear (as in "part of the Clear line") and Reflection (as in "a 'reflection' of the past"). That all being said, the core of Golden Reference – its Matched Propagation Conductor system – was already in place in Clear cables. However, the move to Clear grade also means the cold-welded pressure-crimped loudspeaker connections, high-quality phono plugs and exceptional quality XLR plugs and sockets, these last taken directly from Clear proper.

Cardas is almost unique among cable makers in that it draws its own copper for its cables, so 'Cardas Copper' is not simply a line; it comes from its own small foundry. These two 25.5 AWG conductors (in the interconnects) and dozen 11.5 AWG crossfield conductors in the speaker cable are then held in a PFA dielectric (air filled in the case of the speaker cables). Both are shielded and used in a Litz construction, the conductors laid in a Golden Ratio of the sort Euclid would nod in agreement with.

In the new Clear universe, Clear Reflection sits between Clear Light and Clear, making it second top in the interconnect line and below Clear Beyond and Clear in loudspeaker cables. The loudspeaker cables can be bi-wired or even tri-wired internally on application, the only Clear cable apart from Beyond that allows such a thing. Reflection is easily identifiable from other products in the Clear line, from Sky right up to Clear and Beyond; where all the others are finished in anything from Royal Blue to Pale Blue, Clear Reflection is

finished in black Alcryn, and where Clear uses a black bead to help separate the conductors in the speaker cable, Reflection uses copper-anodised aluminium beads, which look fantastic; more like rose gold than copper in the right light.

Cardas has now produced its forged billet spade lugs in ¼" and 9mm sizes. If you are using anything with a Cardas connector (for example, Avalon, Ayre, Conrad-Johnson, or Jeff Rowland) go with the ¼" plug. For everything else, especially anything made in Europe, go with the 9mm spades instead.

Clear takes an age to condition, and Clear Reflection is no exception. Rather than go through that process personally, I used a Blue Horizons cable burn-in box and left the cables to their own devices for a week.



► Reflection is an excellent cable (both as interconnect and loudspeaker cable), in a way providing a synthesis of the warmth and luxuriousness of Golden Reference with the detail and transparency of Clear. This makes it very different from the rest of the Clear line, which is all about the detail, and less about the full sound, but perhaps possibly more in line with Cardas of old.

This is a cable that abides by the old Hippocratic Oath; first, do no harm. It's a benign sounding cable in all the right ways. Music doesn't push itself at you, it envelops you in this expansive, expressive field that has perfect balance and poise. This helps to draw you into the music, especially tracks like 'Yes! I Am A Long Way From Home' by Mogwai [*Young Team*, Chemikal Underground], where the intensity is piled on slowly and unrelentingly. Clear Reflection gives those jangly indie guitars and cymbal sounds a taut precision, but also gives that bass an intensity, without ever sounding lush or overblown. Consequently as it all builds to a crescendo, the musical onslaught washes over you before blowing you out of your seat. This is entirely right and proper for Mogwai.

The big question is 'Reflection... better than Clear?' In truth, I'm undecided. I've lived with Clear as part of my portfolio of reference cables for several years now, so I've very used to its performance. It has better, deeper bass, it's more dynamic sounding, it has that sense of space and rootedness, and sounds rise out of a more silent background than Reflection. But, Clear Reflection is a 'faster' sounding cable with a fuller midrange. I'm going to have to use the word now, but Clear is 'clearer' and possibly more 'European' sounding than the rich vocal tones of Reflection as a result, but I found myself enjoying the sound from Clear Reflection in a wider range of systems. Perhaps it doesn't throw the window quite as wide open as Clear, perhaps Clear's, er, clarity will help it bring out more in absolute top-end systems, but I just can't help finding it more demanding next to Reflection, with the new cable's extra body and its more 'approachable' sound. I suspect many of those aforementioned audiophiles who thought the pinnacle of audio cable was Golden Cross and Golden Reference might agree. Ultimately though, Clear is better, and if you have the best systems, that 'better' becomes all the more obvious.

The great thing about Cardas Clear Reflection is it brings Golden Reference up to date. But perhaps more importantly, Clear Reflection brings with it all those people who love what Golden Reference did, and who's systems aren't quite 'there' yet, and who would want more pace and leading edge detail to their sound. If Clear Reflection is anything like the success Golden Reference was – and I'd be very surprised if it weren't – it will be a firm fixture in many good audio systems for years. +



PRODUCT DETAILS

Cardas Clear Reflection

Interconnect cable: £949/1m RCA (as tested)

Price: £1,095/1m XLR

Loudspeaker cable: £2,599/3m pair (as tested)

Available in 4mm banana, ¼", and 9mm spade, single or bi-wire

Manufactured by: Cardas Audio

URL: www.cardas.com

UK Distributor: Audiofreaks

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URL: www.audiofreaks.co.uk

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SSC Record Point 420 clamp

by Alan Sircom

Record clamps were an almost lost cause a few years ago. They were either supplied with the record player, or cost a fortune. Occasionally, they were both. The SSC Record Point from Germany represents the much-needed middle ground in record clamping.

The clamp itself looks to be an almost textbook example of all a record clamp needs to be; well-machined enough to make an even load when sitting atop of a rotating platter, massy enough to hold the record down, but not so heavy it compromises the turntable's performance. It's all machined and black anodised aluminium, with a CNC milled steel filling, designed to sit on a spindle, rather than some kind of screw-down arrangement. It's more or less the same size as a hockey puck, and it's called '420' because it weighs 420g.

In fact, it's more complex than it looks. The 'SSC' name stands for 'String Suspension Concept', a tensioned system designed to optimise an equipment stand or platform. The Record Point uses the same system with the lower aluminium cap hiding two metal/textile rings, designed to absorb any resonance feeding in or out of the clamp, while stabilising the record on the platter, all of which is claimed to lower distortion.

Whatever you might think of the claims made, the short and incontestable answer is the Record Point 420 helps. I used it in place of the standard screw-down clamp on an original SME 20, and it just brought things more into line. Transients were crisper, the record sounded quieter. Dynamic range was improved, too, with the turntable sounding more dynamically free and expressive when playing 'Summertime' from *Porgy and Bess* with Ella Fitzgerald and Louis Armstrong [Verve]. In short, it just sounded that bit more 'real'. In performance terms, the SSC clamp sits in the same place as its price – better than the lightweight, screw-down affairs that simply clamp the record in place through sheer torque, and not quite as good as the best of the best. However, it's not an absolute price/performance correlation; from memory, the SSC's improvements to leading edges especially puts it closer to the more high-end clamps than its price might suggest.

The weight of the Record Point 420 might preclude its use with some of the more bouncy decks, but most should be able to compensate for the additional weight, and anyone with a turntable either without a suspension, or designed to



work with a clamp of this sort of weight is in for a treat. It's a tougher call to recommend any kind of clamp on something like a Linn, because they have been designed so tightly to not require a clamp that using one typically compromises important aspects of the presentation.

Regardless, SSC makes more than just a clamp in the Record Point 420, at the sort of price where you might just expect a record clamp. It's well worth seeking out. +

TECHNICAL SPECIFICATIONS

Construction: Aluminium and stainless steel;

SSC textile rings

Weight: 420g

Dimensions (Diameter x Height): 65x26mm

Price: £120

Manufacturer: SSC

URL: www.hifi-ssc.de

Distributed by: NuNu Distribution

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URL: www.nunudistribution.co.uk

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Black Rhodium Athena DCT++ CS loudspeaker cable

by Nicholas Ripley



Tear up all you think you know about Black Rhodium. It's not just that UK cable company, which makes high-performance wires at low prices. It makes high-performance cables at high-performance prices now, too. The new Athena DCT++ CS loudspeaker cable represents the company's current top-notch loudspeaker cable, and is more than just a lot of acronyms.

It's a two-core cable; each of these core conductors are large cross-section, low impedance types made from silver plated copper. These conductors are given Black Rhodium's own DCT++ cryogenic treatment, the '++' part of which involves raising the cable to above and below room temperature, which is claimed to permanently alter the molecular structure of the wire for better uniformity. It's then further treated with the company's Crystal Sound process, claimed to refocus the outer skin of the conductor itself, by filling in voids in the cable made in the drawing process. The conductors are then wrapped in a silicone rubber insulator, built in a twisted pair layout to reduce RFI influence, wrapped in a black woven sheath, which is terminated in 'GN LEGACY VS-1' signature terminal blocks, said to limit vibration passing through the wires. The cables are terminated in the company's own rhodium-plated plugs.

In a way, we should refer you back to Jason Kennedy's review of Black Rhodium's Samba in issue 98, because the sound he describes for that loudspeaker cable is the sound of Athena, only more so here. This is an exciting, forward sounding loudspeaker cable with plenty of deep bass and energy. And 'plenty of deep bass' is no exaggeration, this

goes deep and big and powerfully so. This is not perhaps the most subtle loudspeaker cable on the market, in that bass can dominate and shroud some of the more subtle aspects in the lower midrange, but this makes a good system come alive with exuberance.

Everything through the Athena is writ large, and that's more an observation than a criticism. It stays just the right size of exaggeration (no giant pianos or Brobdigagian violinists), but it makes a big sound; it makes a large soundstage and works best with music with some scale to it. Music is always exciting here, but not breathtaking unless the track is breathtaking. Granted, the more 'lean back' sounding systems prove ultimately less fatiguing, but those seeking some excitement to their sounds are likely to be more frustrated by the balance of such systems in the first place.

Black Rhodium's Athena DCT++ CS is no shrinking violet, then. But neither is it purely for thrill-seekers. It's an exciting sounding cable with a good strong bass and plenty of scale. And that comes highly recommended. +

DETAILS

Price: £1,600/3m pair

Manufactured by: Black Rhodium

URL: www.blackrhodium.co.uk

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Bugge Wesseltoft

by Jason Kennedy

Late last year, Norwegian keyboard player Bugge Wesseltoft released *Dialogue*, an album he made with laptop beatmeister Henrik Schwarz and former est (Esbjorn Svensson Trio) bass player Dan Berglund. Wesseltoft made his name as the leader of the New Concept of Jazz, who made five albums between 1996 and 2004, but he has worked with Jan Garbarek, Billy Cobham, and Nils Petter Molvaer among many other musicians. In many respects, he paved the way for the explosion of experimental beat-driven music that has been coming over from Scandinavia in recent times. His talent lies in bringing jazz ideas into the electronic and dance music field, by making accessible, yet interesting instrumental music.

He is also very keen on experimentation and collaboration; last year saw the release of *OK World* on Wesseltoft's Jazzland label, finding him in cahoots with musicians from Egypt, Spain, India, and all points between and beyond. Wesseltoft may have a tongue twister of a name, but it's one worth remembering if musical adventure is your bag.

I caught up with Wesseltoft in a break from his hectic work schedule, to talk about his hair... ►



“I love Herbie Hancock: everything I did with the New Conception of Jazz started from his Sextant LP.”

► **JK: *Triologue* is one of the sweetest albums you’ve made to date. Is this because of the recent reappearance of your hair, or the presence of Dan Berglund?**

BW: (Laughs) I don’t know really. It’s a mix with the three of us. Henrik and I, we did the *Duo* album and I think with Dan playing bass, it becomes even more organic and jazzy somehow. I really like that combination of the laptop, the bass, and the piano. It’s a good sound.

When did you start playing with Dan?

We started two years ago now. We had our first gig in January 2013; there was four of us. We did our first gig with a wonderful percussion player called Manu Delago. The way we saw it, we wanted the laptop to do the percussive stuff, to make the sound somehow clear. We played quite a lot and worked quite a lot before starting this album; it was a good experience, because we were all really into it.

Might there ever be a *Duo* album with just you and Dan?

Ummm, no, but there’s this wonderful Swedish pianist called Jan Johansson, he died in the 1960s but he did some fantastic music, a kind of Swedish folk/jazz, that was the beginning of the Nordic jazz sound. His album [*Jazz på Svenska*] has a 50th anniversary this year, so Dan and I are going to do this music as a duo: as a kind of tribute to Johansson.

As an album?

Just concerts: we’re doing a tour in Sweden. Maybe something more will come out of it, but you should really listen to *Jazz på Svenska*, you can easily hear how everyone from Bobo Stenson to Tord Gustavsen has been inspired by it.

What inspired you to use strings on *Triologue*, is this the first time you’ve used strings on an album?

No it’s not, we’ve been doing this up and down. I’ve written stuff for quartets over the years. But the two tunes with the strings are tunes I wrote with Henrik. We did new music for an old German silent movie last year in Luxembourg, and we were commissioned to work with the Luxembourg Philharmonic orchestra. We arranged it for strings, trombone and stuff, and the pieces turned out well, so we wanted to use those two tracks on the album, and Dan added the bass.



I really like the track ‘This is My Day’. Was this influenced by Herbie Hancock?

(Laughs) Herbie who? I love Herbie Hancock: everything I did with New Conception of Jazz started from his *Sextant* LP he made in ’73. It’s an incredible album and of course his Rhodes sound is a huge inspiration.

I was intrigued to see what you were doing to the Fender Rhodes when you played at the Barbican last year. You were treating it quite savagely!

(Laughs) It looks harsher than it actually is. I bought my first Fender Rhodes in 1981, I’ve been playing it since then and I love it. I think that using it like a vibraphone is quite interesting. It has metal pieces in the top that are attached to the keys, and it sounds great if you hit it like that.

I’ve noticed you’ve been collaborating with more and more musicians. Is that what you find interesting; is that what excites you, now?

It’s always been like that; that’s how you really move on. You play with and meet other people and get inspired, but also when you work with your own band, you have a chance to develop your own ideas. But I spent 10 years with the New Conception of Jazz, building it up and only really working with that group, and now I really love to play with different people. It takes so much time and energy to build up one particular group. It’s more fruitful for me to play with various musicians. ►

"I don't know these guys from Germany but the sound was fantastic..."

*Michael Fremer Stereophile,
T.H.E. Show Newport 2013*



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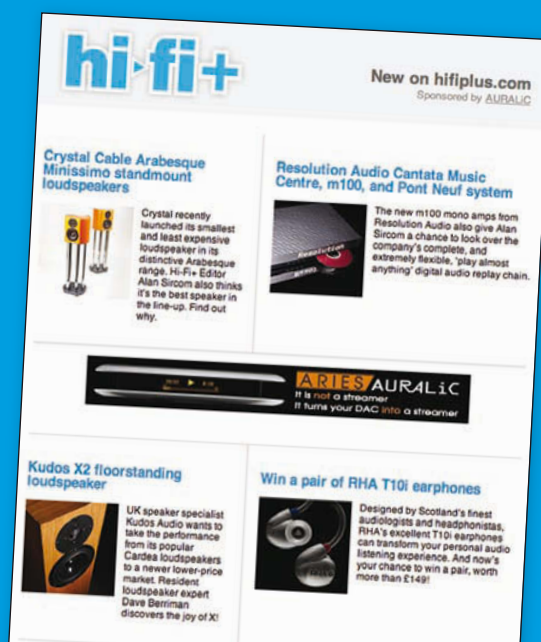
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► **You offer some of your albums in 24/48 and I expect you've noticed that Neil Young has been promoting his Pono system with even higher sampling rates.**

I've been offering my stuff in up to 192! My own site has an album in 192, some of the others are in 96 and others in 48. It depends on how it's mastered. To be honest, I don't really hear the difference between 48 and 96 kHz, but I do hear the difference between 16 and 24 bit and I hear the difference between 44 and 48 kHz. But the main difference is between 16 and 24 bit, not to mention MP3, which is awful. It's good to offer the audience the same quality that we use in the studio. I don't see why it shouldn't be possible.

It's a real opportunity to hear what you hear in the studio. But, the world seems to be heading towards streaming rather than downloading, what do you think of that?

It's unavoidable, and I think it's a good thing. I don't have Spotify, but I have a service called Wimp [Tidal], because they have CD quality and pretty soon they're going to start streaming in 24 bit. It's double the payment, which means the artists get some more money. The main problem with streaming is the money for the artists, but as an idea I love it. With this streaming service, you can find anything – it's really incredible. It's more how to distribute the money, how to make it viable for artists, now nobody's making money,

"I'm working with this old-fashioned modular synth and it's really good fun: you never know exactly what's going to happen."

only big hit music makes money. On the other hand, music that was released 40, 50 years ago that's difficult to find and the money's already earned – I think it's super that it's on a streaming service.

When we last spoke you said you had a plan to start an avant garde jazz rock metal group, did that ever come to pass?

(More laughter) Did I? I do various things at least in Norway. I have a B3 organ and we do some prog rock stuff, but no I haven't done any experimental metal. However, I'm working with this old-fashioned modular synth and it's really good fun: you never know exactly what's going to happen. I'm probably going to put a project together with that, but it's difficult for me to lose the piano thing, I really love the sound of the piano and to play little melodies. And that doesn't always go so well with experimental music.

Your cover of 'Round Midnight' is particularly good, is Monk a hero?

Yes and no. I've been working through my periods of jazz and I'm still listening to a lot of that stuff. But we'd been looking for a standard to be treated in a very special way. With standards, the question is how can you play it in a fresh way; it's been done extremely technically, extremely fast, extremely slow. I just like to go for the whole harmonic aspect and focus on the melody. I think Dan plays it extremely beautifully. It's just an attempt to hear a standard in a fresh way.

Have you bought any good loudspeakers lately?

I have my studio monitors, but I have nothing special. I use Dynaudio I think which is fine. You should speak to Henrik: he just bought some crazy loudspeakers, not necessarily studio monitors, but they say it sounds incredible. +

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Vincent
People & Music

record reviews

How To Read Them

The information contained in the record reviews is presented in the following way. Albums are identified by label and – where possible – serial number. Beneath this you will find one or more icons which denote the available formats for the recording. The first icon refers to the format reviewed.

The ratings at the bottom of each review reflect the reviewer's opinion of the recording quality, and musical merits of the album. You'll soon realise that a great many musically significant albums offer less than wonderful sound. Don't let it put you off! For your information, the scale rates a standard, good quality pop recording as slightly below average.




















This issue's featured reviewers are:

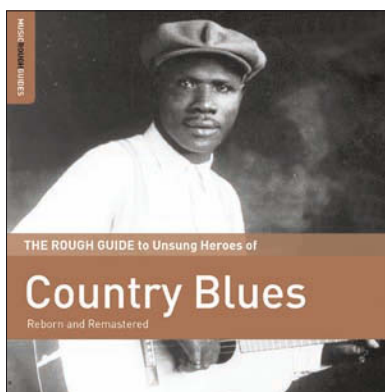
DD – Dennis D Davis

JK – Jason Kennedy

PT – Pete Trewin

SP – Stephen Priest

	CD		120g LP
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The Rough Guide to Unsung Heroes of Country Blues

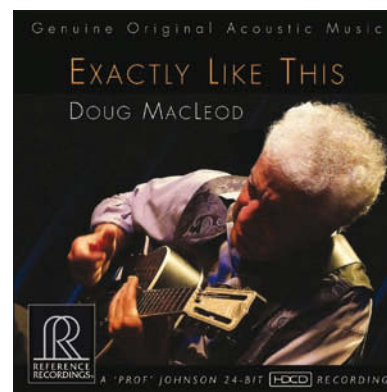
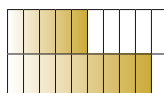
Various Artists

World Music Network

Recorded in the 1920s and 1930s, this 24 track compilation is a goldmine for collectors of early blues. Country blues music was mostly 'one man and his acoustic guitar'; there are pieces on here with full band backing, but simplicity is the essence. The music they play incorporates ragtime, gospel, hillbilly, and even Dixieland jazz, all played with considerable aplomb despite the limited instrumentation.

That the tracks often sound simple is because the artists were so accomplished. People like Gus Cannon, Henry Thomas, and Peg Leg Howell rank alongside (even) lesser known but equally entertaining artists, including Charley Jordan whose 'For To Keep It Clean' is essential, as is Hambone Willie Newbern's 'Roll And Tumble Blues', which has a riff that John Lee Hooker made good money with. Another highlight is 'Old Original Kokomo Blues', a tune that was repurposed by Taj Mahal on 'Sweet Home Chicago'. It's seminal stuff that sounds remarkably good, given its vintage and origins. The transfers err on the side of smooth and could have a bit more of raw energy that 78s are capable of, but the material itself is solid gold. **JK**

RECORDING
MUSIC



Exactly Like This

Doug MacLeod

Reference Recordings

Once in a blue moon a recording comes along that warrants a rating for sound quality above nearly all the rest, and more often than not Reference Recordings releases fall into this category. I can't give this album 12 for recording quality, but that's what it warrants; it makes your system sound as though it costs at least twice the price you paid. There is no apparently grain, no indication of a digital process save for the lack of noise, and a precise rendering of the beautifully natural sound that this acoustic band produced in the studio.

Musically, the latest from Doug MacLeod is good too – definitely not your regular audiophile lift music. This is partly because it's played live without overdubs, but largely because he is a very capable blues guitarist and singer with some fine backing. MacLeod has a rootsy style that is reminiscent of the greats and he does it with just the right amount of energy. He cites a number of inspirational musicians for individual tracks; a list that includes Wes Montgomery, John Lee Hooker, and even Duke Ellington. Some of these are obvious, but they are always imbued with the idiosyncracies of the player. MacLeod tours the UK in May – try to catch him. **JK**

RECORDING
MUSIC





Bucket of Songs

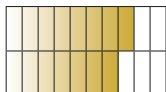
LabField

Hubro

The Hubro label from Norway has a knack for finding delightful experimental music. All too often that adjective translates as 'difficult' or purely 'cerebral' and results in sounds that have a very limited appeal, but not here and not with this latest release from LabField. This, I hesitate to use the word 'band', consists of guitarist David Stackenäs from Sweden, percussionist Ingar Zach from Norway, and Italian guitar and electronics meister Giuseppe Ielasi. These are not internationally renowned names, and this music is not likely to make them such, but it all works on a number of levels.

Play *Bucket of Songs* quietly and you have an intriguing ambient backdrop, or turn it up for an adventure in a full-frequency sonic terrain of quite extraordinary diversity. 'Straight A's in Constant Sorrow' (sic) is the best example, with big percussion set against a large backdrop of electronica and ambient guitar that draws you in and gives a glimpse of a world view that is alien, yet welcoming. On a few tracks ('Wild Birds' and 'Peace Drums'), the trio is joined by the voice of Mariam Wallentin, who makes her point more directly than the instrumental numbers but retains their overall feel. Different, in a good way. **JK**

RECORDING MUSIC



No Deal Remixed

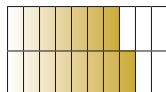
Melanie De Biasio

Play It Again Sam

Presented by Gilles Peterson, the DJ who got De Biasio her break in the UK, this collection of eight remixes sheds new light on this fine singer songwriter. I reviewed her *No Deal* album last year, and was very taken by the elfin Belgian chanteuse and her smoky and intense work – most of which is pretty pared back on this release, where the focus is almost solely on her voice.

Remixing consists of taking the parts or tracks of a multitrack recording that are required, and building up sounds to create a very different result. It's not purist stuff, but at its best it's highly entertaining. 'The Flow' is remixed by Hex, who slowly builds his beats into a hypnotic groove that shifts seamlessly and ends with the flute from the original. Both Chassol's take on 'Sweet Darling Pain' with its strange keyboard sounds and Clap! Clap! Clap!s top quality beats on 'I'm Gonna Leave You' are very fine too. But the highlight is the Cinematic Orchestra's version of 'I'm Gonna Leave You'; Jay Swinscoe has used voices like this in the past, and he knows what to do with them. It builds gradually and rises to a pulsing crescendo that is very powerful, reminding you that the best remixers are also the best music makers. **JK**

RECORDING MUSIC



Sounds Of Life

Simone Sou, Guilherme Kastrup,
Benjamin Taubkin

Adventure Music

Brazilian pianist Benjamin Taubkin is a fluid and melodic player with a knack for collaborations that others might find challenging. Percussionists Simone Sou and Guilherme Kastrup are from Galicia in northwest Spain 'Percussionists' in the broadest sense that is; they also use sampling and voice recordings of indigenous Indians, some of which occasionally take centre stage on this album.

The opener 'Pifaiada' is reminiscent of Weather Report's livelier moments. It starts out almost as a challenge to the listener. But, persevere for the first six minutes and you are rewarded with sublime piano melodies, in what seem like a different piece of music for the denouement.

This approach is evident on the next number, 'Gota D'Agua,' which is probably the most attractive track on the album if you are a jazz piano enthusiast – albeit jazz in the expansive sense pioneered by Bill Evans rather than a speed fest. The seven pieces were largely written by Soukast, so there is a strong percussive element that, being European rather than Latin, takes a bit of getting used to. So, the label name is no accident. That said, *Sounds of Life* has some excellent pieces for those prepared to listen and learn. **JK**

RECORDING
MUSIC



SA

Blood, Sweat & Tears

Audio Fidelity AFZ5 198

If you were of sufficient age back in 1969, while you may have spent your quiet moments at home playing Blind Faith, once you ventured out and went to a party or a club, the chances are you would be listening to (a lot of) Blood, Sweat & Tears. Men were also well advised to keep a copy of that eponymous *BS&T* album on hand, as the band had a much broader appeal to the fairer sex than some of the more 'cutting-edge' titles in a typical LP collection at the time. Released in December of 1968, the LP sold over four million copies in the US and spawned three pop radio hits.

The combination of jazz/folk infused rock with a very prominent horn section was an intoxicating new sound that was recorded by Columbia Records, on one of the earliest 16 track recorders. Just how good that recording could be was demonstrated recently with a 45-RPM vinyl reissue by ORG. Now, Audio Fidelity has brought the tapes in for a digital transformation. In addition to the CD layer, the disc includes SACD two-channel and multichannel mixes. Steve Hoffman performed the stereo mastering and the SACD layer, in particular, is particularly successful, coming very close to the sound of the ORG 45 RPM reissue. Steve, you've made me so very happy. **DD**



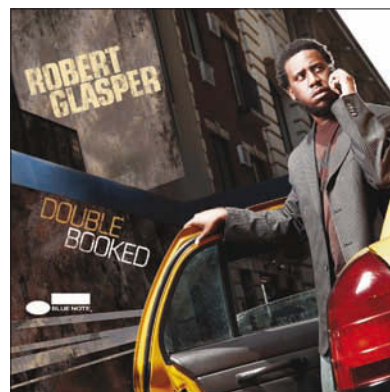
180g

Esther Phillips

Pure Pleasure KU05

Esther Phillips is one of the best – and, sadly, least remembered – Rhythm and Blues singers of the 20th Century. Discovered by Johnny Otis, she was twice nominated for the Rock and Roll Hall of Fame, and received four Grammy nominations. This comeback record of 1972 accounted for one of those nominations. Like Phillips, the CTI sister label Kudu is little remembered today. Kudu released 39 soul jazz albums in the 1970s, and seven of those were from Phillips.

Joined by an excellent backing band from the Creed Taylor CTI stable, Phillips turns in a sizzling performance of songs celebrating her scars from love and drugs. Phillips died at the age of 48 from liver and kidney failure resulting from drug use, and some of the song lyrics here express the painful ravages of drugs. That tight jazz/blues band, along with a dozen strings, and a half dozen backing singers, in absolutely no way interferes with her ability to pull the last ounce of meaning from a ballad. Recorded at Rudy Van Gelder's studio, the excellent sound is enhanced by Ray Staff's mastering and the whisper quiet vinyl surfaces. Another winner from Pure Pleasure, and one that belongs in any R&B lover's collection. **DD**

[illegible]

140g 140g

Robert Gasper

Blue Note B0022335-01

A double Grammy winner and Steinway Artist, pianist Robert Glasper, born in 1978, is one of only ten Blue Note artists under 65 to be featured in the 75th Anniversary Vinyl Reissue series. This 2009 release takes its name from the fact that half of the album was recorded with Glasper's acoustic trio, while the balance was recorded with his electric band, The Experiment. Playing two sets in the same night with two bands creates a hook for the title.

On vinyl, you get a single slipcase with two stand-alone albums. What holds them together, in addition to Glasper's unique playing, is the fact that both sessions were recorded live in the studio without any instrumental overdubs. Glasper's energetic playing can have an almost hypnotic effect, and it is this feature that predominates on the trio recording. By contrast, his eclectic musical tastes show through on the electric set, incorporating funk, hip-hop, rap, jazz, and pop in an intoxicating brew. The sets were recorded in different studios, each with decent but not stellar sound. The vinyl reissue, mastered in-house at Capitol Records, improves on the sound of the CD version. This is an important release and an appetite whetter for Glasper's new trio recording, due out in June. **DD**



Blue & Sentimental

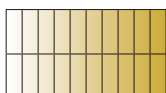
Ike Quebec

Music Matters 84098

There is the Blue Note of superstars. But there is also the Blue Note of label regulars; the players who never reached Sonny Rollins, Herbie Hancock, or Wayne Shorter levels of innovation or fame, but who became part of the house sound of Blue Note and played on innumerable backing assignments. Many Blue Note titles recorded by these musicians have long been collector favorites, and have stood the test of time as classics. Ike Quebec and Grant Green are perhaps the two quintessential examples of Blue Note regulars who recorded outstanding music without ever earning accolades as innovators or achieving superstar status.

One of the most luscious sounding of all jazz recordings, Quebec's *Blue & Sentimental* makes its debut on the Music Matters label in its 33 1/3 rpm series of LP reissues. *Blue & Sentimental* deserves consideration as one of Blue Notes' masterpieces, both as to sound and music. Quebec and Green, backed by Paul Chambers, Philly Joe Jones, and on one track Sonny Clark, provide a seminar on how to play a ballad. It's also one of Rudy Van Gelder's best Blue Note recordings, and as remastered here by Kevin Gray, the sound and music is to die for. Highest recommendation. **DD**

RECORDING MUSIC



Julie Is Her Name Vol. Two

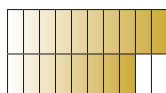
Julie London

Analogue Productions APP 7100

Julie London's star turn as an actress and chanteuse was recently underscored by the beautiful Blu-ray reissue of Anthony Mann's great western *Man of the West*, in which London stars alongside Gary Cooper's stoic man of high morals faced with the ghosts of his past transgressions. London was a shy sex symbol of the 1950s; a fact made obvious by the cover photo on her 1958 album for Liberty—displaying her sultry lipsticked smile, deep aqua eyes and perhaps a bit too much sweater detail. This follow-up to her first smash hit for Liberty helped sustain Liberty's financial stability until it was sold in a package deal along with (most famously) Blue Note Records.

She is backed this time around by guitarist Howard Roberts and bassist Red Mitchell. A few bars into the opening track, 'Blue Moon', and there is little doubt why Analogue Productions chose to reissue this LP. London's breathy phrasing is captured perfectly, and few records present a more compelling facsimile of a singer, guitar, and bass player performing in your listening room. This excellent Kevin Gray mastering is matched with a first class foldout cover, filled with sex kitten shots of London. Fabulous sound and music worth savoring! **DD**

RECORDING MUSIC



Touch And Flee

Neil Cowley Trio

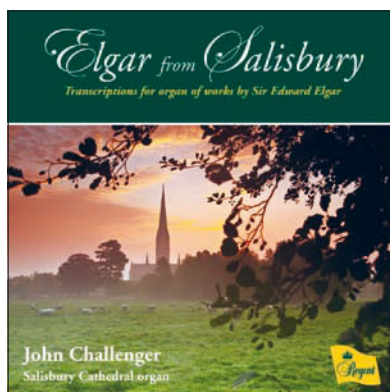
Naim Jazz 207

The cover artwork to this LP sets a tone of quirky humour—on the front cover, a plastic set of fingers strokes a cropped section of bassist Rex Horan's beard. The back cover photo has the same plastic hand hovering over what appears to be a less mentionable part of the anatomy. That sense of humour extends as well to Cowley's music, with song titles like 'Couch Slouch' and 'Kneel Down.' Cowley's piano playing is a pop jazz fusion that is more George Winston than Jason Moran or Brad Mehldau, but without Winston's new age baggage.

Cowley's classical training shows through, and the introspective, dreamlike melodies incorporate trance music with soul and electronica for a fusion hard to label but easy to enjoy. The trio consists of bassist Rex Horan and Evan Jenkins on drums. Cowley's reputation got a great boost from his backing role on Adele's multi-platinum LP. This new LP from Naim promises to further extend Cowley's reputation beyond UK shores. Naim recorded the session at Three Crows Studio in Wiltshire and mastered it at Metropolis Mastering. Optimal Media, the same house that pressed the Beatles Mono box, did an equally fine job here. An excellent sounding set of indie rock jazz surprises. **DD**

RECORDING MUSIC





Elgar from Salisbury



Transcriptions from the works of

Sir Edward Elgar

John Challenger, Salisbury

Cathedral Organ

Regent – REGCD463

This disc contains a selection of the works of the great British composer, Sir Edward Elgar. Here they are performed on the great 'Father' Henry Willis organ, in the magnificent building that is Salisbury Cathedral.

The organ is a beautiful instrument with four manuals and no fewer than 65 stops. For the most part the instrument remains untouched since its original installation (which was completed in 1877), except for a few minor additions and restorations. The organ is played on a daily basis for most services, and regularly for concerts from both local and visiting organists from all over the world.

Elgar was 20 years old when the 'Father' Willis organ was completed in Salisbury Cathedral. It is unclear whether he ever heard or played the instrument, but Willis' characteristic tones would have been well-known to him: Elgar spent much time at Hereford through the Three Choirs Festival, and an equally fine instrument was installed there by Willis in 1892, the sound of which he would surely have known all too well.

John Challenger (born 1988), the Assistant Director of Music at Salisbury Cathedral, has chosen the selection of music very considerably. The disc shows off the organ and its capabilities in a great light. Challenger has been absorbed in the musical

world since a very early age. As a chorister at Hereford Cathedral and then Organ Scholar at St. John's College, Cambridge, there is no question of his great talent. He received his Fellowship of the Royal College of Organists (FRCO) in 2008. This is Challenger's first solo recording since arriving at Salisbury in 2012.

The opening track 'Prelude to The Kingdom: Jerusalem' Op.51, is an homage to the early Christian Church. This is Challenger's own arrangement (as is track four) and it is clear that Challenger is not attempting to recreate the sounds of the instruments for which these pieces were written on this disc. His aim is to exploit the instrument and create a piece of music, which is affiliated to Elgar's wishes, yet not regimentally following an orchestrated score. To that end, it would be rare to hear the piece performed in exactly the same way again, even by Challenger.

Track three, Imperial March, Op.32, arranged by George Clement Martin, is full of pomp and ceremony as is befitting for a piece which featured in the Diamond Jubilee Celebrations of Queen Victoria. The solo tuba sings out above the accompaniment in triumphant shouts, which echo down the long nave of the Cathedral.

There are two further 'marches' which feature on this album, that of the Coronation March Op. 65 and the Empire March. The Coronation March is a huge piece, it is over 12 minutes long and features the deep rumblings of the 32ft pedal stops and the tuba. As the piece approaches the exquisite

ending, Elgar teases the listener. I found myself thinking that the piece was close to its climactic ending. Subsequently, I realised I was being fooled! At the culmination, the last chord is played with deep rumbling pedals, and the solo tuba features soaring above all the other stops like a triumphant bugle.

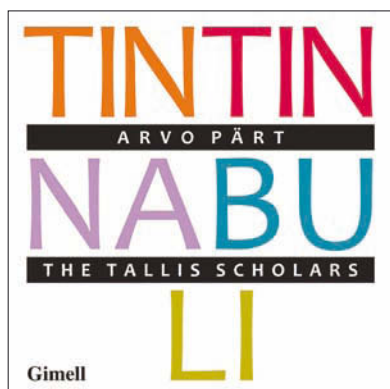
Track seven was written in 1915, after WWI broke out. Elgar had a very close affinity with Germany, due to the support he had received from the music world for his works, and wrote this piece as one of despair and compassion towards all who had fallen. The arrangement by Harvey Grace is beautifully melancholic; the registration used on the 'Father' Willis befits the emotions and passion of a desperate situation. The stops used are not bright and celebratory, rather more understated and subdued.

Following this is the aforementioned 'Empire March' and the disc ends with the beautiful 'Prelude' and 'Angel's Farewell' from *The Dream of Gerontius* Op. 38 arranged by Brewer. Challenger suggests in the sleeve notes that perhaps Elgar saw similarities between himself and Gerontius – a 'tragic idol' – and interestingly goes on to say that 'on his deathbed, Elgar called for a photo shoot rather than a priest!'

One cannot fail to be moved by the substantial offerings on this disc from Regent. It is highly recommended. **PT**

RECORDING
MUSIC





Tintinabuli

Arvo Pärt

Peter Phillips

The Tallis Scholars

Gimmell

CDGIM 049

For those unfamiliar with the name, Arvo Pärt is a Berlin-based, Estonian-born composer, widely regarded as one of the most unique and influential in Western music. However, I doubt there can be many audio enthusiasts who remain unaware of Pärt, because his 1977 work *Tabula Rasa* has been a regular feature in Manfred Eicher's ECM New Series catalogue since it was recorded back in 1984. Pärt and Eicher have collaborated on many projects for that label ever since.

Pärt is now in his 80th year and this collection of pieces represent compositions from his Tintinnabuli method (hence the title of the disc), which he developed in 1976 after a period of relative inactivity. The term refers to the unique sound a bell produces when struck, a sound that contains overtones and ringing sonority. It's his choral work that demonstrates this technique to best effect. Much like Sir John Tavener, he wrote in the avant-garde or Serial (twelve tone) method before finding his voice in the sonorous and transcendent sound-world that Tintinnabuli created.

To understand this ethos is to comprehend the communicative, almost ritual-like nature of this extraordinary music. It is by nature hugely engaging and significantly connects to a much wider population

than the music of any other contemporary composer I can think of. Indeed, many critically celebrated musicians 'on the other side of the fence' have name-dropped Pärt as an influence or inspiration, such as Björk, Rufus Wainwright, Michael Stipe of R.E.M, and Nick Cave, not to mention the odd Scandinavian drone metal band, and even the electronic dance/minimalist drum 'n' bass musician, Zomby (check him out on Spotify).

Peter Phillips and the Tallis Scholars are perhaps currently the finest specialist early music choral ensemble, and whose output has been nothing short of first-rate. Over the many years of their existence (the Tallis Scholars were founded by the current director back in 1973) they consistently have managed to achieve the same, uniquely pure blend and tonal timbre, which (presumably) as members come and go, is no mean feat.

Their only other recorded foray into contemporary music was a groundbreaking disc of the aforementioned Sir John Tavener's *Ikon of Light* way back in 1984. Again it's no surprise that Pärt's music has an affinity with the Tallis ensemble and its director; there are strong similarities between the mood – and even the writing (such as *I am the True Vine*) – of these works and the finest sacred choral music from the Renaissance and Tudor periods. The music has insight and a calming, at times almost hypnotic appeal that whatever your religious – or non-religious – belief may be, is undeniably spiritual.

The singing is of the highest quality – featuring wonderful sustain, support, and an unsurpassable purity of line and tone (the Tallis Scholar's calling card) that is a perfect match for the clarity of Pärt's writing. There is no point in singling out any specific pieces here as they are all of the same superlative level of quality and performance. In many pieces where there is a split in the various parts, the one-per-part sound is refreshing and yet also somewhat antediluvian and familiar, taking the atmosphere right back to the cloisters of a 12th century ecclesiastical edifice.

Gimmell offers an astonishing range of ways to listen to this recording, from physical CD to an array of different download options on their website – from CD quality to both stereo and surround sound masters in various resolution up to 24/192. The sound quality of the 24/192 stereo download (as reviewed here) is tip-top.

This is one of the finest all-round recordings I've heard in a long time. I would plead with you to acquire it in whatever format best suits and spend an hour of your life letting this astonishingly moving and contemplative music wash over you. It will most definitely not be time wasted. Not simply very highly recommended, this should be a mandatory part of almost everyone's musical collection. It gets no better than this! **SP**

RECORDING
MUSIC



Classic Albums

Album of the Month: AC/DC 'Back In Black'

by Alan Sircom

Death wasn't going to stop a band like AC/DC. Most acts, faced with the possibility of replacing a vocalist like Bon Scott would prove too much for a lesser band, but early in 1980, the legendary hard drinking frontman was found dead in his Renault 5 after a binge in a London pub. The band was devastated and contemplated splitting up. Instead, after the funeral of their friend and singer, AC/DC went auditioning for a replacement.

The Australian five piece (featuring guitar-playing brothers Angus and Malcolm Young) quickly happened upon singer Brian Johnson. Bon Scott had seen Johnson sing with the band Geordie, and was impressed. And, given the rest of the band began to feel continuing would have been what Bon Scott would have wanted, Brian Johnson was the obvious choice (and probably better than one of their other options, Noddy Holder of Slade).

Johnson didn't have long to fill Bon Scott's shoes. Scott died on 19th February 1980. Johnson was hired by the band on the 29th March, his role was publically announced on 8th April, and was recording his first album with the band from mid-April to early May 1980 at Compass Point Studios, in Nassau in the Bahamas (for the tax breaks). Legendary producer "Mutt" Lange was called in to repeat the success of 1979's *Highway to Hell*. However, far from being a tropical paradise, the Bahamas were rocked by storms during the seven-week session. Nevertheless, this gave Johnson a chance to get into his role as both singer and lyricist (the Young brothers concentrating on the all-important role of riffs and melodies... but mostly riffs). Johnson's lyrical style was not dissimilar to that of Bon Scott – sex and drugs (booze, actually) and rock 'n' roll, although ultimately his more populist style would later prove extremely good for album sales.

Compass Point contributed heavily to the sound of *Back In Black*, but possibly not in a good way. The sound was very dry and tight, completely at odds with the huge sound of AC/DC. Nevertheless, Lange's perfectionist stance meant there was a lot of good material to hand.

Once the recording was done, the ten tracks were mixed down at Electric Lady Studios, in New York City. The all-black cover was the band's idea – a sign of mourning for the loss of Bon Scott – and was not popular with Atlantic's A&R men, in exactly the opposite way to the legendary 'none more black' scene from 1984's *This Is Spinal Tap* mockumentary movie. The famous opening bell was recorded by Ronnie Lane's Mobile Studio.

The album was released in July of 1980, less than six months after Bon Scott's death. The band were initially worried that AC/DC's loyal following would reject the idea of a replacement singer, and the album would tank. In fact, it would go on to be one of the most successful LPs in its history, with more than 50 million sales. The quality of the recording didn't prove an impediment; it's actually praised for its dynamic sound, whether on LP or one of the many CD remasters over the years. It has also been a regular fixture in 'best album of all time' lists by just about every rock journalist, website, and magazine in history.

Tracks like 'Hell's Bells', 'Back In Black', 'Rock 'n' Roll Ain't Noise Pollution', and 'You Shook Me All Night Long' have entered into the public consciousness. Whether it's yet another hoard of teenage boys finding solace in what could be politically incorrect lyrics, or a film soundtrack needing to find a leitmotif for a maverick, AC/DC's *Back In Black* has become the epitome of classic heavy rock. 35 years later, AC/DC's biggest hit still sounds as fresh as ever! +



Recorded: Compass Box Studios, Nassau, Bahamas, April-May 1980

Producer: Robert John "Mutt" Lange

Released: 25 July 1980

Label: Atlantic



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